

VŠB – TECHNICAL UNIVERSITY OF OSTRAVA
FACULTY OF ECONOMICS

DEPARTMENT OF FINANCE

Srovnání pražské a varšavské burzy cenných papírů
a posouzení jejich možné fúze

Comparison of Prague Stock Exchange and Warsaw Stock Exchange
and the Assessment of their Possible Merger

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Ostrava 2015

Bachelor Thesis Assignment

Student:

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Study Programme:

B6202 Economic Policy and Administration

Study Branch:

6202R010 Finance

Title:

Srovnání pražské a varšavské burzy cenných papírů a posouzení jejich
možné fúze
Comparison of Prague and Warsaw Stock Exchange and the Assessment
of their Possible Merger

Description:

1. Introduction
 2. Literature Review
 3. Methodology
 4. Findings
 5. Discussion
 6. Conclusion
- Bibliography
List of Abbreviations
Declaration of Utilisation of Results from the Bachelor Thesis
List of Annexes
Annexes

References:

- ARNOLD, Glen. *The Financial Times guide to the financial markets*. 1st ed. Harlow: FT Press, 2012. 576 p. ISBN 978-0-273-73000-2.
- REDHEAD, Keith. *Introducing investments: a personal finance approach*. 1st ed. Harlow: FT Prentice Hall, 2003. 352 p. ISBN 978-0273673057.
- RUTTERFORD, Janette and Marcus DAVISON. *An introduction to stock exchange investment*. 3rd ed. Basingstoke: Palgrave Macmillan, 2007. 400 p. ISBN 9780333778029.

Extent and terms of a thesis are specified in directions for its elaboration that are opened to the public on the web sites of the faculty.

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Date of issue: 21.11.2014

Date of submission: 07.05.2015



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Prohlašuji, že jsem celou práci, včetně všech příloh vypracoval samostatně.

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Here I declare, that whole work including annexes was developed independently.

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Abstract

Financial system helps to transfer money in the economy from those who want to invest to those who need them. Part of this system are stock exchanges which went through big changes since the start of developed financial markets. Few decades ago in the US were many stock exchanges, now there are only the big ones. This is starting to happen in Europe. Consolidation is often mentioned term and it is also one way to overrun competition and to survive. This study is focused on two market in Central and Eastern Europe, Prague Stock Exchange and Warsaw Stock Exchange. The objective is to compare them, analyse how effective there are and also to analyse whether they should merge or not.

This study researched that main thing that affects competitiveness of stock markets is their liquidity. Liquidity affects all other factors like number of issues, or market capitalization. With this finding, study is mostly focusing on liquidity in analysis and comparison of the two markets. For this analysis were used official statistics from stock exchanges and also to validate or disprove our findings, two Czech stock market experts were interviewed. This also helped to answer the question about possible consolidation.

The conclusion of this study is that the Prague Stock Exchange should focus on its strategy and effectiveness. One possible way could be consolidation with Warsaw Stock Exchange, but the most important thing is strategy. Consolidation offers opportunity for restructualization to increase effectiveness and liquidity. There is no effective merge without effective new strategy, but there could be effective strategy without merger. PSE needs to explain the advantages of public offers to private companies, needs to be attractive form of access to new money. With strategy comes improved presentation, with effective presentation come new investors and companies and with that comes improved liquidity. In addition stock exchanges should focus on increasing their efficiency, rather than raising more capital.

Acknowledgments

I would like to thank Ing. Martina Novotna, Ph.D. for her professional financial and analytical input which was very helpful in analysis and comparison of the markets and of course her academic guidance. Her expertise and professional support was inspiring and I am very grateful for that.

My gratefulness also belongs to experts of this study: Jaroslav Brychta from XTB Brokers and Dusan Jalovy from UniCreditBank. Their thoughts and expertise helped to come to the conclusion and shaped the answers. And their willingness to cooperate and their professional attitude was inspiring for my future professional career.

I would like to also thank to everyone from Faculty of Economics of VŠB – Technical University of Ostrava who made possible for me to study Double Degree in University of Huddersfield which was helpful for this study.

My thank you also belongs to my friends and family who motivated me to get this researched done and do it professionally.

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1 Introduction

The world has come a long way from barter trade, when if someone wanted goods, we had to have goods the other one wanted. Through the invention of money, which could keep its value over time, to a developed financial system where people don't have to travel all around the world to buy something they want. They can buy it on stock exchange.

Companies all around the world have to deal with difficult question: How to raise capital for expanding our business? One of the options are stock exchanges.

Stock exchange is an important part of almost every country around the world, because of that the stock exchange should work effectively and also be liquid. In the world changing so quickly, stagnating institutions, companies, countries and other subjects have difficulties to survive. This is also case of stock markets, which are merging all around the world to become more competitive, to be a survivors and leaders of the change. This trend can be seen mainly in developed countries, which are afraid of growing emerging markets and want to be still the leaders in world's financial markets.

There is but one region who does not know where he belongs. Not so developed and big to be counted as developed market, but not so fast growing to be counted as emerging market. The region is Central and Eastern Europe. Stock exchanges from this region which after fall of communist regime were opened in 1990's, now struggling with stagnation, in some cases with a decrease. Should they use the same strategy as stock exchanges in developed countries and merge with each other?

This study will focus on Prague Stock Exchange from Czech Republic and Warsaw Stock Exchange from Poland. Practical part of the study is a comparison of the two markets to analyse their performance over time and to see which one is doing better. After knowing the performance of these markets, study will discuss possible effect of the merger with two financial market experts, which were chosen based on their area of interest.

Firstly this study will analyse financial markets as a tool for transferring money and accelerating the economy, then study will look at the main factors that decide the whole competitiveness of stock exchanges which are needed to survive in such competitive environment. Second part of theoretical research is focused on mergers. Study will go through the advantages of consolidation which will be focused mainly on Europe, then consolidation history in the USA

will be mentioned, then current situation in consolidation and example of Euronext merger will be discussed.

After the research in practical part, this study will conclude this topic with its view on possible merger of Prague Stock Exchange and Warsaw Stock Exchange. The merger is discussed in economic and political sphere of Czech Republic and even the president of Czech Republic is for the merger, precisely for a takeover by Warsaw Stock Exchange.

2 Literature Review

The aim of this literature review is to introduce the basic mechanisms of financial markets with further focus on factors of competitiveness of stock exchanges which will help this study to compare two chosen markets. Furthermore comprehensive analysis of advantages of consolidation between individual financial markets, and trends and examples from this area will be researched, which will help to answer a difficult question, whether the two markets which will be compared should merge.

2.1 Stock exchanges and its effect on global and regional economy

To be able to come to a quality recommendation about consolidation of chosen stock exchanges, this study first needs to give an overview how this financial markets works and effects the whole global economy and individual countries.

2.1.1 Stock exchanges as a part of global financial system

To introduce the basics of financial markets, Arnold (2012) says, the purpose of financial markets is to build trust among people to be able to maximize opportunities for every member of the society. Since barter trade as we know it, society have come a long way. People paid for goods and services with other goods and services, then the money were invented, which was a big progress to effectiveness of exchange. Double coincidence of wants was no longer required and store of value which allows people to save their money for future needs have become big advantage. Where paying with money for goods and services ends, paying with money for money starts with financial markets as we know it. Paying with money for money is meant investing with a goal of receiving profits.

2.1.1.1 System to be trusted

If someone wants to expand their business thanks to financial markets they have an opportunity to borrow money or sell their shares in public offer. This would not be possible without rules and trust in the system. This system also reduces search costs because people who look where to invest do not have to search for companies which want to borrow money, but they have all the information in one place. The problem with shares occurs when the investor wants to sell the shares that he bought from company in initial public offerings, because the company does not have to buy them back. That is why the secondary market was created, to allow investors

to buy and sell shares between themselves without any participation of the company which shares are involved. Owners of these shares can participate in voting about decisions of the company like vote the board and also they have rights to dividends from the profits of the company (Rutterford, 2007).

In stock exchange the fair price is made. Fair price is when all available past and present information about each shares are included in the share price. Fair price does not mean correct price, if share is undervalued or overvalued is for investors to consider and possibly to use this opportunity. The market is not here to make correct price, but fair price (Rutterford, 2007).

2.1.1.2 System to transfer money

As Redhead (2003) points out, the financial system exist with a purpose to transfer money from those who want to invest to those who wish to borrow. The investors can invest their money directly through stock exchange or indirectly by institutional investments like pension funds, insurance funds, unit trust and investment trust. Even though someone wants to just put their money to their bank account and doesn't want to invest, the bank will invest their money for example in form of loans such as mortgages, business loans, personal loans etc. It is because the main purpose of a stock exchange is to transfer money from investors, even though there are only owners of simple bank account and unaware of this system, to those wishing to obtain the capital. Without stock exchange, investors and those seeking money would have problem to find each other, the transaction costs with dealing on their own would be much bigger, companies want large amount of funding but small individual investors are able and willing to invest small amounts and diversify their saving among more investments, and also companies want to borrow capital for the long term, but investors want to usually have instant access to their savings. Investors have equal information and opportunity and if they want to sell something that they bought on stock exchange, they does not have to search on their own for someone who is willing to buy, but the market thanks to its liquidity will do this for them.

2.1.1.3 Types of stock exchanges

There are few types of stock exchanges. Large companies are usually traded in national stock exchanges such as London Stock Exchange, New York Stock Exchange, Tokyo Stock Exchange, Frankfurt Borse and others. These types of stock exchanges are very liquid because most of the world's capital flows through them. The other type is regional stock exchanges with less liquid market, such as Prague Stock Exchange, Munich etc (Redhead, 2003).

2.1.2 Stock exchanges as a tool to accelerate economy

Stock exchanges exist for lowering cost of trading ownership rights in firms, but in some cases their creation can mean something more than just the opportunity to raise capital for real investments, as in case of the Warsaw Stock Exchange which was created in 1991 after the fall of the Soviet bloc. In those cases, stock exchange can be also sign of freedom and open market (Baier, Dwyer and Tamura, 2004).

2.1.2.1. How stock market affects individual economy

Stock exchange is not only for the biggest and most developed countries, every business should have the opportunity to raise capital in its countries for investments and growth. As Levine (1998) found out, growth and liquidity of stock market is strongly correlated with economic growth, capital accumulation and productivity growth.

This claim is also supported by Baier, Dwyer and Tamura (2004, p. 22) when they add “the evidence also indicates that a more efficient allocation of resources rather than more capital accumulation is the primary channel through which a stock exchange affects output growth.” This claim shows that stock exchanges should focus on increasing their efficiency, rather than raising more capital.

In his research regarding opening a stock exchange in less developed countries Minier (2009) highlights that countries with open stock exchange grow faster in the next 5 years than countries without one. One of the answers to why countries with stock exchange grow faster seems simple, because companies raise capital, which will be used for investing projects to grow or save money. This capital flows to suppliers of the companies, the supplier can now also invest, or possibly employ more people which also produce more money.

2.1.2.2 Independent stock market at any cost?

Levine (1998) argues that it is not unambiguous that every country needs its own stock market, it is true that every country benefits from access to stock market, but it is not necessary that every country should have its own stock exchange on its soil. This argument suggests that countries, which do not have stock exchange yet, do not have to create one, but they should create the opportunity to access foreign stock exchange in form of branch on its soil. Or another possible scenario, small undeveloped stock exchanges do not have to struggle on its own, but can possibly merge with bigger stock exchange, or for example more small stock exchanges can merge and create a bigger and stronger player.

In addition, Rousseau and Sylla (2003) stress that well-functioning securities markets are one of the five key components of a good financial system. This could mean that illiquid stock exchange with couple of tens shares is not the best for a country, and small stock exchanges should merge with other ones to increase their liquidity.

2.2 Stock Exchanges and its competitiveness

Arnold, Hersch, Mulherin and Netter (1999) define stock exchanges as firms that compete among each other in things including liquidity provision, price discovery, etc. In addition stock exchanges are using scope and scale economies through attracting new initial public offers (IPO) to broaden their portfolio and trying to increase volume of existing listings. Doede (1967) adds evidence that stock exchanges which are using economy of scale declining average operating costs of each stock exchanges. Di Noia (2000) also adds that stock exchanges produce two goods which are listing and trading service, and their customers are firms that want to be traded on their stock exchange and also intermediaries that want to trade there. Kang and Stulz (1997) say that to increase competitiveness, stock exchanges should focus on lowering execution costs.

Ferrarini (1998) mentioned categories in which stock exchanges compete against each other. These categories are provision of immediacy, price discovery, low price volatility, liquidity, transparency and transaction costs and categories such as reputation and quality are also important.

2.2.1 Transaction costs

Transaction costs are characterized like a fee for making a trade which increase the whole price for the trade which is paid by investor. They can include costs like research cost, bargaining cost and enforcement costs, also they may include agency costs (Smullen & Law, 2008). As Steil (1996) mentions, the transaction costs are linked with liquidity, because investors are looking for lowest prices and if stock exchange can offer lower price, the number of trades will increase because it will attract investors from other stock exchanges or the current ones will trade more often.

2.2.2 Liquidity

a) Liquidity as immediacy

This helps to close every trade as soon as possible. If someone wants to sell their shares, with more liquid market there is a chance of quicker or immediate execution (Ramos, 2003).

b) Liquidity as market depth

The bigger is the number of investors, the less chance is that few trades will affect the price of share. For a significant change in market price there is need of much bigger number of trades in one way, up or down (Ramos, 2003). We can also look at it in other way, as when in one market there is only few listed companies and because of that the index of the whole market could be affected by changes in few shares. As we mentioned earlier, liquidity is influenced by transaction costs (Ramos, 2003).

2.2.3 Price discovery

How the price of share is shaped by market condition by supply and demand, the attempt is to have reasonable price which is effective in such a way when for example the demand will increase then the price of share will increase with it (Rutterford & Davison, 2007).

2.2.4 Listing fees

This is important part of every decision about which stock market to choose to list companies' shares, however often comes to the decision between attractiveness of the market and costs of listing (Ramos, 2003) and attractiveness of the stock market could be also seen as the liquidity, so companies can often decide to forget about listing fees in their decision and choose liquidity because with liquid market, there is better chance of success for their companies' shares. Another factor which firms consider when they make decision are listing requirements (Di Noia, 2001).

2.2.3 Number of intermediaries

One of the factors that firms look at when they choose on which stock exchange list their shares is number of intermediaries which could be sign of liquidity, because competition should decrease price of commission that customers pay to buy stocks, also number of intermediaries could show attractiveness of the market which mean number of customers and their purchasing power (Economides, 1993).

2.2.4 Attractiveness

a) Ability to increase awareness of companies' stocks

Other factor is ability to increase awareness of companies' stocks which depends on attractiveness of the stock exchange. This factor is important because the bigger number of investors have awareness of these stock the bigger is the stock price (Merton, 1987). This ability depends on the size of the market, because small market is not relevant for investors.

b) Number of listed companies

Also the number of firms that are listed in stock exchange is another important factor, it is a sign of quality, because it increase attractiveness of the market and also the market has bigger liquidity if there are 100 firms then 10 (Di Noia, 2001).

c) Initial Public Offering

One important thing add Werner and Tesar (1997) as they analyse that firms often list their shares on other stock exchange than their national, or at least they list their shares on foreign exchange after listing on their national, which means that stock exchanges should attract new companies to list their shares even from other countries, which also applies to small exchanges, which firstly should focus that companies from their country should not choose other exchange as their first listing and after that on attracting new foreign companies.

2.2.5 Ways to increase competitiveness

There is number of things that stock exchanges can do to increase their competitiveness, one is merger, following takeover, competition in market architecture where one big player can change their system of trading, allowing remote membership, modifying price, trading hours, negotiating cooperation and technological agreements to harmonize their trading system with others, changing forms and ownership structure, for example how Euronext was listed on their stock exchange by IPO (Di Noia, 2001). However as a waste of resources Di Noia (2001) names the existence of many small stock exchanges and see further potential in integration with single European currency and on this thought study will continue to research trends in consolidation.

2.3 Stock exchanges and its consolidation

In the previous chapter was mentioned that stock exchanges are firms that compete among each other, one of the reasons are growing emerging markets, another reason is a need to be a leader, to increase profit and cut costs.

As World Federation of Exchange shows in its Costs and Revenue Survey (2012), 74 percent of its members are for-profit organisations, in comparison with a year 1998 when 38 percent of members were for-profit. World Federation of Exchange consist of the world's main stock exchanges, for example Nasdaq OMX Group, Euronext and Winer Börse AG (Nielson, 2008). WFE is an organisation which offers guidance in business strategies and harmonization of practices of exchanges (World Federation of Exchanges, 2015). Increasing number of for-profit stock exchanges shows that they are not only a tool for national financial markets, but also an organisations with main aim to gain profit. This change makes management of stock exchanges all around the world to think about effectiveness of its functioning and about cooperation, even further about merger of two or more stock exchanges. With the aim to have bigger market share, stock exchanges around the world are merging. For example New York Stock Exchange merged with Euronext, however Euronext is on its own again, London Stock Exchange merged with Borsa Italiana and Tokyo Stock Exchange with Osaka Securities Exchange (Nielson, 2008).

2.3.1 Consolidation in the USA

Consolidation of stock exchanges can be shown in example of the US, where in the nineteenth century companies listed their stocks on stock exchange in the same city where is the company based. In the 1929, 63.7% of all securities were traded on regional stock exchanges and 8.6% on New York Stock Exchange (NYSE), ten years later it was 23.4% and 63.4% and one of the reasons for that is a reduction in communication costs with using telephone (Arnold, Hersch, Mulherin & Netter, 1999). This had effect on merging of regional stock exchanges in the US, where in 1900 the number of them was 100 (Serafie & Shahid, 2002) and in 1940 it was only 18, with 7 stock exchanges in the 1980 (Arnold, Hersch, Mulherin & Netter, 1999). In the present the consolidation continues, for example Archipelago Holding, former Pacific Exchange from San Francisco and Los Angeles merged with NYSE in 2006 (Postelnicu, Wells, Wighton & Politi, 2005).

The advantages of the mergers are innovation, reduction of transfer taxes, extended trading hours and more which will be introduced further in the next chapter. When we look at percentage change in trading volume from one month before merger and one month after, in

case of Pacific exchange merger in 1957, there was a decline of 6%, however the decline in all other stock exchanges at that time was 12%, so a net increase is 6%. In addition to other examples, the Midwest merger increased volume of trading by 60% with an increase by 36 percent in other exchanges and Philadelphia-Baltimore increase by 23%, 6% increase in other exchanges (Arnold, Hersch, Mulherin & Netter, 1999). Also the increase in market share for these merging markets was approximately 7% in the fourth year after the merger, in comparison with 5% increase 4 years prior the merger. These merged regional stock exchanges became more effective in competing against NYSE (Harris, McInish, Shoesmith, Wood, 1995)

This chapter suggest general opinion that mergers of small exchanges increase their competitiveness against leaders in region. NYSE in the US, in Europe it is London Stock Exchange. The history of US consolidation could be an example for European markets to merge in a similar way and as it will be discussed in next chapters, it is starting to happen.

2.3.2 Advantages of consolidation with focus on Europe

One of the trends in Europe is that stock exchanges build their cooperatives of which there are members and also owners, after that they merge together. Among another trends is a privatization of stock exchanges (Di Noia, 2000). In other work Di Noia (2001) suggest that in Europe with this trend of mergers could happen that only one stock exchange would survive, as he points out that what happened in individual countries, where there were more than one exchange, but now there is only one, and also what happened with smaller stock exchanges which significant number of them was acquired by bigger one. And was found that first strategic option for European stock exchanges is implicit merger because of presence of cross advantages in marginal costs. Merging stock exchanges should pay attention to coordination and policy guide. In addition to marginal costs, stock exchanges increase their welfare because of the cross advantages (Di Noia, 2001).

2.3.2.2 Advantages of mergers

The reasons for mergers are from the main part to improve factors mentioned in chapter 1.2 Stock exchanges and their competitiveness. Currently there is a trend of mergers because successful merger improves revenue enhancement such as reputation effects which can be seen as attractiveness of the market, and market power which can be seen as market share (Ramos, 2003). Other reason is costs reduction where subjects can benefit from economies of scale, economies of vertical integration which benefits from owning more components of the market.

And of course during merger there is restructuring process which can eliminate inefficient management.

Economies of scale is the answer for everything that is getting bigger and consolidation of stock exchanges is not an exception. As Steil (2001) points out that economies of scale and trading system harmonization makes foreign participation, consolidations effective. Hasan and Malkamäki (2001) see Euro as an important factor that intensified consolidation in Europe and made European stock exchanges to reorganize their operations to become more competitive and also to start alliances with other stock exchanges to use the power of economies of scale.

With mergers, stock exchanges tend to reorganize their exchange architecture, which improves communication and technology, for example electronic trading systems. Also the change from state non-profit ownership helps to increase effectiveness of the market, because there is more pressure on stock exchanges to be more innovative to be able to increase their profit and survive international competition. There is even more pressure if a stock exchange is listed in market, because investors look at their financial results and potential and if they are not satisfied they will sell the share and the price with market capitalization of the stock exchange will go down. This pressure push the management of each stock exchange to be innovative and do a big progress in effectivity (Ramos, 2003).

As Ramos (2003, p. 13) adds “The ultimate goal in the “race” for cooperation is survival, since destructive competition is avoided. Merger and other forms of integration seem to be a solution for members to maintain their presence in the market.” If the goal of stock exchange structure is to maximize satisfaction of every participant with minimizing transaction costs then the mergers are a great way to do a reorganization to be fully effective as much as the particular stock exchanges can be with their environment and opportunities (Ramos, 2003).

As McAndrews and Stefanadis (2002) adds other important advantage, mergers could increase trading volumes as there is more potential buyers, which would be shown in increased liquidity and another increase of buyers because increased liquidity would mean that if someone wants to sell some shares, there is higher probability that they will find buyer faster. More buyers could be also attracted by decrease of cost in cross-border trading.

2.3.2.3 Disadvantages of mergers

If this study should mention disadvantages of consolidation it will not find many, but for example national stock exchange can lose its full influence on management and also if national

stock exchange is sold to some bigger stock exchange there is problem with national pride, as the citizens feel that their stock exchange should stay on hands of their country. Also with innovation in technology, economies of scale stops to be such an important argument for consolidation, as the cost advantage for larger stock exchange is not so visible (Ramos, 2003).

Also accounting and law differences could be an obstacle and disadvantage of consolidation however there is a trend of harmonization worldwide (McAndrews & Stefanadis, 2002). Another important reason to not merge are information costs and Home-country bias, where can be cultural and language differences if should be created stock exchange for different countries, which could result in increase in information costs, because of need of translation. This is also reason for a home-country bias, where countries prefer to list their shares on stock exchanges in their country. Last difficulty for mergers is a difference in clearing and settlement systems and difference in these systems would increase transaction costs. This difference stands in a way of further consolidation in Europe where transaction are nine times higher than it is in the US and in a case of cross-border transaction it is forty-six times higher (McAndrews & Stefanadis, 2002).

2.3.2.4 Merger or not?

Among hypotheses of advantages of a merger is extension of the market because there will be more listed companies. Secondly deepening the market because there will be bigger volumes which is good for a liquidity because now there will be a need of more deals to change the price of a share. And thirdly lowering transaction and information costs thanks to harmonization of systems and information channels. (Nielson, 2008). Merger is usually a tool to get factors that we are interested in on the move. In other words if the variables as liquidity or turnover is not changing for an individual stock exchange, it is a reason for a merger to change non-improving factors, because merge has many advantages, for example effective restructualization, as we showed in chapter about advantages of consolidation (Nielson, 2008).

Mergers occur when there is a believe that merged subjects will be worth more together, than they are on their own which if this happen, this is a big advantage of consolidation (Ramos, 2003).

The ultimate outcome of consolidation in Europe can be a single global centre in Europe with smaller centres in each country due to economies of scale and other variant is a single market due to liquidity (Ramos, 2003).

2.3.3 Euronext example

As Nielsson (2008) finds, merger of stock exchanges from France, Portugal, Belgium and Netherlands, now called Euronext, has increased liquidity for big firms which operate in more countries than only its home country listed on this stock exchange. This could be because investors who has now access to new shares, thanks to this merger are more inclined to buy share of a company which they know or heard of. Among small or medium companies there is no significant change in liquidity which proves our point that the main profit from merger have big firms with international sales. There has been also recorded increase of market share by 2.18% and its main portion came from London Stock Exchange. This do not have to happen every time when some stock exchanges merged, because foreign investors may already be trading in more known companies (Nielson, 2008).

2.3.3.1 Bigger increase for big firms with foreign sales

Big firms not necessary well known are also more traded because there are more often covered by analysts and investors expect that they will have better information about them. In case of smaller firms the merger can be dangerous because small firm in bigger market may be overlooked because it is not very visible. Even in the case of relatively big firms with domestic operations can happen that in merged bigger market they can get lost and not be so visible in comparison with big international firms (Nielson, 2008).

In the case of Euronext merger firms without foreign activity were unaffected by the merger. However this does not imply for big firms or firms with foreign sales, which support the idea that effects of the merger are unevenly distributed and depends on size and foreign exposure, in which investors have informational advantage. Definition of big firms as top 20, 10 and 5% of all firms show the foreign sales coefficient and the merger effect is bigger with bigger firms, in other words it is bigger in top 5% percent then top 20%. If we look deeper in to this, we find that big firms with foreign sales who were cross-listed (they shares were available in other stock exchange) did not recorded increase in turnover in case of Euronext. Where turnover is seen as “one specific dimension of liquidity, namely the amount of trading that takes place among market investors,” (Nielson, 2008, p. 245)

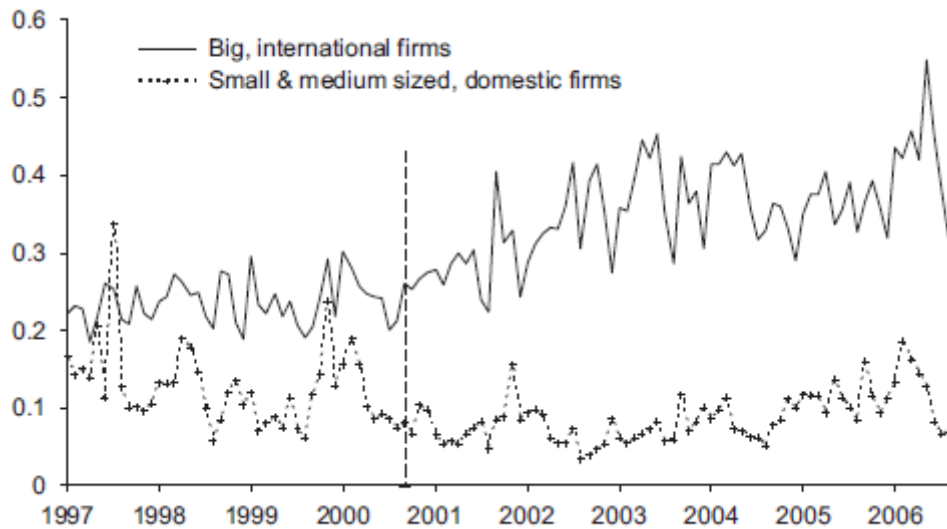


Figure 1: Turnover trends across Euronext firms (Nielson, 2008, p. 254)

Figure 1 illustrates that when stock exchanges merged into Euronext, the turnover has increased for big international firms. However the merger seems to have no impact on small and medium sized domestic firms.

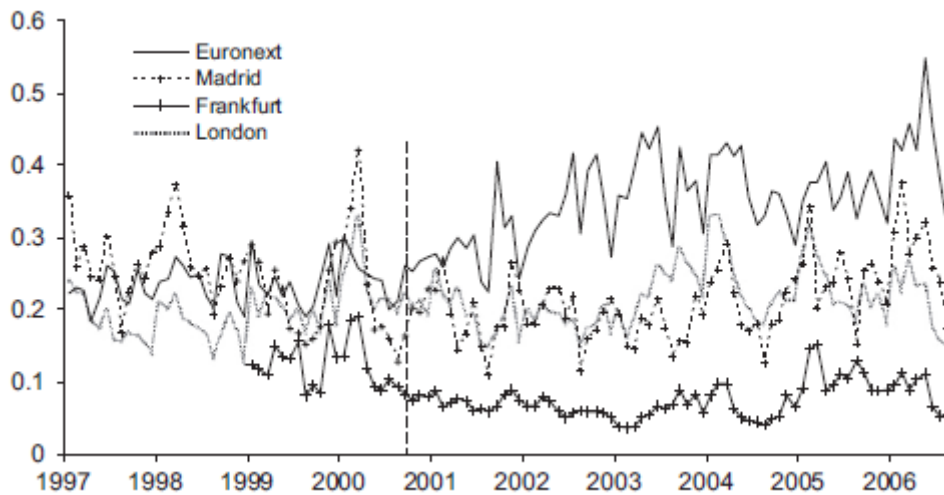


Figure 2: Turnover trends across exchanges (Nielsson, 2008, p. 254)

As you can see in figure 2, increase in turnover for Euronext big international firms in comparison with same size and types firms from other European stock exchanges such as Madrid, Frankfurt and London, which excludes that the reason for an increase in turnover may be EU integration instead of merger.

2.3.3.2 Cross-border trading

The positive effect of merger experienced by big and foreign sales firms, in the example of Euronext, was for Brussels, Lisbon and Paris. Amsterdam's shares were already highly traded by foreign investors. However when we look at cross-border trading, in example of Amsterdam, the share of total trading in Amsterdam by other members of Euronext (Paris, Brussels, Lisbon) increased from 19% to 56% (from 2001 to 2004), which shows significant positive effect for Amsterdam. On the other hand, the highest relative increase was for Paris, share of total trading by other members from 1% to 7%. This not mean that increase by cross-border trading was not increase only by substitution effect, which could mean that investors started to supplant their home shares with the foreign ones, because the value of trading went up (Nielson, 2008).

2.3.3.3 Decrease for other markets?

When Nielson (2008) looked at other European stock exchanges whether the increase of market share of Euronext, caused decrease in any other stock exchanges, he found out that while from January 2000 to August 2006, Euronext gained 2.18% of their market share, the London Stock Exchange (LSE) decreased by 5.78%. The reason for the increase of market share of Euronext could be that, how Portes and Rey (2005) wrote, asset flow depends on size of the market and according this study mergers of stock exchanges are a good thing to consider. However this does not explain why the LSE market share decreased and the answer could be simple as Nielson (2008) point out, as continental stock exchanges are increasing their power and market share by mergers, LSE is slowing down and it is not the only important stock exchange from the world's view.

2.3.3.4 Another progress of Euronext

To conclude this chapter, Euronext merged with New York Stock Exchange (NYSE) to become NYSE Euronext in 2007, after 5 years later InterContinental Exchange (ICE) acquired them. Brown (2013, p. 134) summarize this as follows, "The ICE-NYX merger embodies what the financial services industry is becoming and captures the model that will allow exchanges to remain competitive in today's marketplace: mega-exchanges with broader asset classes and electronic platforms." In June 2014 Euronext has become independent of NYSE again by initial public offer (Intercontinental Exchange, 2014). Euronext performance on the stock market is good, with increase almost 50% from IPO in June 2014 to February 2015 (Bloomberg, 2015).

One of the most important questions that could help our study, whether the Euronext merger helped economies of the countries that there are in, answers Ake (2010) when he says that liquidity of stock market helps to national economy in the long run. This idea is also supported by Nowbutsing and Naregadu (2009) when they analyse financial market in Mauritius, which can mean that effective stock markets helps to developed countries, as well as developing.

2.4 Conclusion

This literature review introduced the basics of how world's financial markets work and how it has involved from barter trade to current stage of stock exchanges. The main thing that is important in first chapter is firstly the purpose of financial markets which is transfer of money from those who have them to those who need them, which can be also said as from investors who don't need the money at the moment and want to increase their fortune, to borrowers who need money and are willing to pay a price for it in form of interest or portion of earnings.

Secondly the very important information for this study is that stock exchange affects economy of the country and that markets should focus on increasing efficiency more than capital accumulation. How efficient are chosen markets will be analysed in individual analysis and also discussed in the interviews.

In the second chapter, competitiveness of markets is analysed which will be helpful for choosing factors that will be analysed in the comparison of stock exchanges. Massive focus will be on attractiveness of the market because it is link with everything. Attractiveness is affected by the size of the market (market capitalization, number of listed issued which is linked with new IPO's, total turnover value) and also affected by liquidity which is also linked with performance of the market (indices).

In the third chapter information were gathered about advantages of consolidation and effects from done mergers. This will be helpful to answer study's main question whether the stock exchanges should merge. In the chapter were researched effects of consolidation in the US and in the example of merge in Europe and this will be discussed with experts to answer if these effects will apply for the merge of our chosen markets.

More about the way how new information will be applied to our analysis is discussed in the next chapter, Methodology.

3 Methodology

The aim of this dissertation is to compare Prague Stock Exchange (PSE) and Warsaw Stock Exchange and answer a question if the PSE should merge with the WSE. Since there is not any method to calculate if stock exchange should merge with another or maintain its independence, this dissertation will focus on comparison of the two stock exchanges to see main differences between them and to see which market is more developed. This study will also use opinion of Czech stock exchange experts.

For the comparison of the two stock exchanges secondary data from official website such as Fact books will be used. Main data for comparison will be trade values, market capitalization, development of indexes of each stock exchange, and number of listed companies. The ability to attract new companies for an initial public offerings is one of the most important indicators how a stock exchange is ready for the future. As was mentioned in Literature Review, liquidity is important part that decide competitiveness of markets and this study will look at this issue in form of total turnover.

The comparison part of this study will use mainly quantitate data, because for the main question if the PSE should merge with WSE it is necessary to know how much money flow through an individual stock exchange.

Secondary research in this study is the most important part because when this study compare the two stock exchanges, this study will contain overview of their development that is 100 percent correct, unlike our primary research, because in the interview will be discussed the possible effects of the merge and try to answer the question if these two markets should merge. However, there is no correct answer, so the focus will be on secondary data and analyse the progress of the markets over time and see if any of them is stagnating, which as was find out in literature review, possible reaction to stagnation is merger. And after analysis and comparison these markets, study will focus on the merger in the interview and if it would make sense economically as for the stock exchange, as for the whole country where the market is. Study have to be careful about the primary research, because these data will be collected be interview and answers will contain subjective opinion. Because of that, the main relevant research will compare the markets and then with consideration of Czech financial expert, study will discuss the question about the merger.

3.1 Research approach

The approach, the method of data collection is largely influenced and decided by the types of information that is needed to research the question that the study need to answer (Blumberg, Cooper & Schindler, 2011). To decide approach of this study, research onion will be used as can be seen in figure 3.

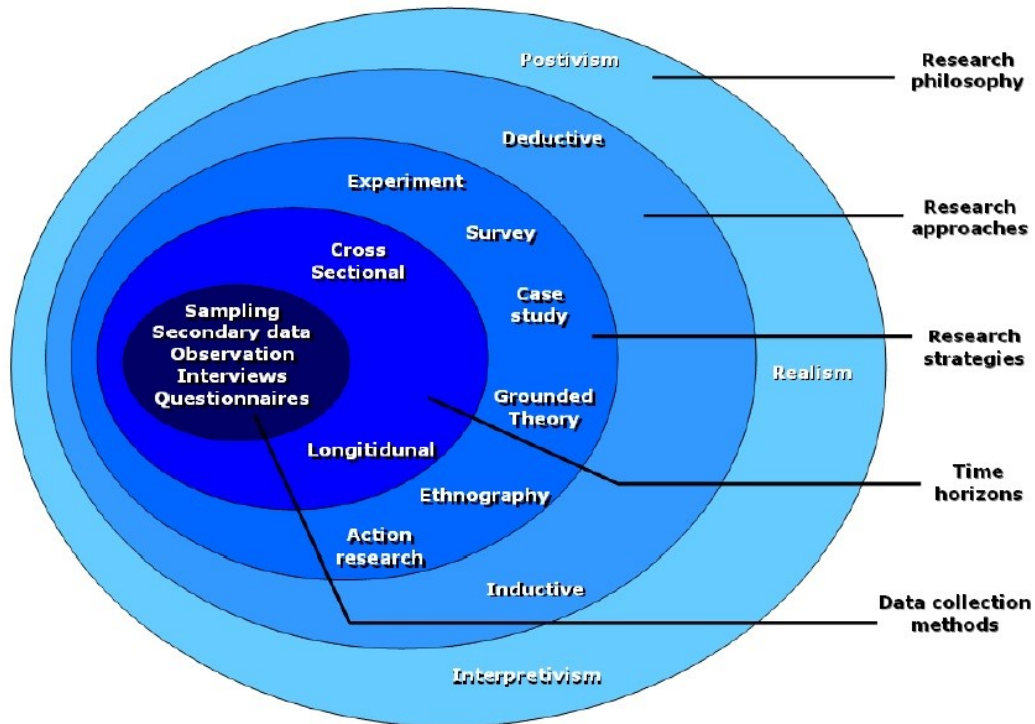


Figure 3: Research onion (Saunders, Lewis & Thornhill, 2003)

3.1.1 Research philosophy

Before this study start to compare markets and answer questions about their consolidation, first there is a need to decide how the research should be conducted. Philosophy is “the use of reason and argument in seeking truth and knowledge, especially of ultimate reality or of general causes and principles” (Oxford Compact Dictionary and Thesaurus, 1997, p. 557).

Research philosophy can be seen as how we look at the world and with what assumption (Saunders, Lewis & Thornhill, 2012). These assumption will help to decide research strategy and the methods that will be choose to research what is necessary to do this research.

3.1.2 Realism

This study will use a realism, which sees things as they are, “what we sense is reality” and reality is independent of the mind (Saunders, Lewis & Thornhill, 2012, p. 136). This philosophy shares two features with positivism which is another philosophy. Firstly, social and natural should use the same approach of collection and explanation of data. Secondly that not everything can be included in description, but there is external reality which acts upon us (Bryman & Bell, 2011). This philosophy has also common features with interpretivism, that what we think is real is influence us (Bryman & Bell, 2011).

This study believe that there is a need to analyse financial data in comparison of stock exchanges, as well as feelings and thoughts about consolidation of these markets. Realism allows us to do that because it combines parts from positivism and interpretivism, which allows to use its advantages.

3.1.3 Deductive approach

This approach allows to research from more general topic to specifics (Bryman & Bell, 2011). This approached is suitable for this study because the research is conducted on the basis of what is already known about chosen topic. As it was used in Literature review where study started from general introduction of financial markets, through factors of competitiveness of stock exchanges, to concrete example of a merger.

This will be used also in an interview where study will start with questions on region importance, then will move to markets and individual effects of possible consolidation.

Whole deductive approach of this study can be seen as in the literature review study will introduce certain theories and trends and in practical part will be analysed how is it in a concrete example.

3.2 Research strategy

3.2.1 Research strategy of comparison part

As was already mentioned, this part of study will use secondary and quantitative data and it is the more relevant, objective part because this study will analyse performance of two stock exchanges over time by cross-sectional approach by comparing annual data from factbooks of each stock exchange.

3.2.1.1 Official statistics as secondary quantitative data

In this study data from official statistics will be used such as yearly Factbooks of PSE and WSE. This statistics contain all the data which is needed for comparison of the two markets study wants to focus.

a) Secondary data

Official statistics are secondary data and will be used because comparison of data from different sources can bring new observations (Bryman & Bell, 2011) and study need reliable statistics to compare chosen markets.

Disadvantage of secondary analysis such as relevance of the data and no control over how the data were collected does not apply to this study because official statistics will be used.

b) Quantitative data

This type of data is seen as less difficult to analyse because a statistical analysis can be used and many readers may find quantitative data more convincing (Cameron & Price, 2009). Quantitative data are more used in economics, which is a good sign for us because analysis and comparison of stock exchange is economic research (Blumberg, Cooper & Schindler, 2011).

Quantitative data can be measured based on their reliability and validity. Reliable data have stable measures over time, all indicators relate to each other (Blumberg, Cooper & Schindler, 2011). And validity exist to make sure that the tool or indicator that study use to measure something, really measure it (Blumberg, Cooper & Schindler, 2011). With official statistics study can be sure that these data are reliable and valid.

c) Official Statistics

This study will use official statistics from stock exchanges. The data are complete and relevant because it is not only a survey which was answered by a sample but study can use the whole

data, as in our case it can be for example total turnover, or number of listed companies. Another advantage over surveys is the possibility to analyse the data over time, so there can see progress over time and analyse if the data which are relevant for our study are getting better or not. This will be helpful for our analysis because there is a need to see the development of important factors of each stock exchange. And also because this statistics are made with the same process study can compare them, which is also another important ability that is needed. These official statistics from stock exchanges are absolutely reliable and there is no need to have to be careful about the trueness of the data, as it is in surveys where respondents may tend to make themselves look better (Bryman & Bell, 2011).

3.2.2 Methods for stock exchange analysis

Analysis of stock exchanges will be divided into three parts. First two will be individual analysis of each stock exchange and this study will use third part to compare these two markets.

3.2.2.1 Individual analysis

In this sections you will see two types of analysis, analysis of the whole stock exchange over time to see trends that are happening in each market and analysis of instruments of each stock exchange at particular time.

a) Number of issues and market capitalization

Market capitalization is one way to measure the size of the stock exchange. It is market value of every company which shares are traded on one stock exchange. Market value of one share is the number of shares multiplied by market price for the share (Rutterford, 2007). It is a useful measure to compare the size of companies, as well as the size of the whole market by sum of individual capitalizations (Arnold, 2010). As was discussed about attractiveness of stock exchange in chapter 1.2, the number of listed companies is really important for attractiveness, as well for liquidity, because the bigger the market, the less influence has one issue to effect the whole market (Di Noia, 2001). Also if investor does not have many options, it can make him ignore the market as a whole. To see if the market is trying to improve liquidity this study will look at how change in number of listed companies effects the whole market capitalisation. If the number of listed issues has decreased and market capitalisation did not, or did less, study can view this fact as an effective reducing of illiquid issues. To confirm this thought, this study will show average capitalization (Market capitalization / Number of issues) to demonstrate if change in number of issues was a step for effectiveness or not.

b) Liquidity

In the Literature review this study found out that liquidity is a key factor for competitiveness of every stock exchange. Liquidity has many meanings, as was discussed in previous section number of issues is important for liquidity of stock exchange, as well as average capitalization. However average capitalization may not properly show actual condition of the market, because some shares may have bigger capitalization than others. The same applies to the number of issues, because there can be theoretically small market with small number of very liquid shares. In this section this study will focus on liquidity as immediacy and as market depth.

- Liquidity as immediacy

This type of liquidity secures that if someone wants to sell or buy their shares on secondary market, his trade will be dealt with immediately if the market is very liquid. As a tool to measure liquidity as immediacy this study will use turnover ratio, which allow us to see a percentage of shares that were during one year, as well as turnover ratio of the whole stock exchange. And it is calculated as Total turnover value / market capitalization.

There is no recommended high of turnover ratio, study will analyse development of this ratio over time for each stock exchange and compare our results with research of Credit Suisse which analyse with data from World Bank, the difference between emerging and developed markets. However it is important to acknowledge, that this study will compare turnover ratio of market of shares of individual stock exchange with turnover ratio of global equity markets calculated for whole country.

Global equity markets turnover ratio (2013, %)

Source: World Bank, World federation of exchanges, Credit Suisse research

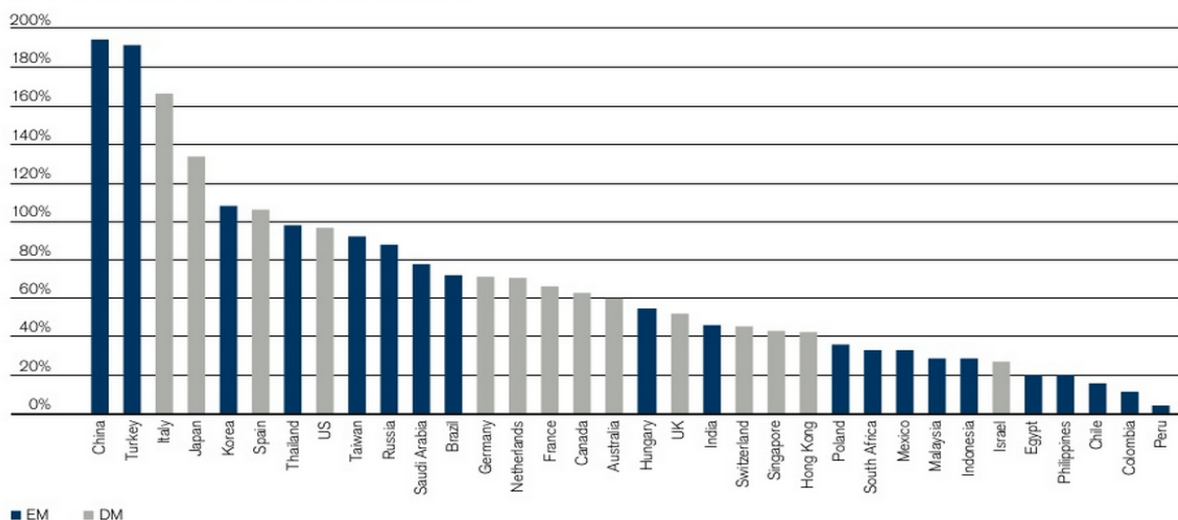


Figure 4: Global equity markets turnover ratio (Credit Suisse, 2014)

First of all in this section before this study will look at turnover ratio, first consider another important factor of every stock exchange, which is total trade value. This factor shows how much money went through market and should not be missed out in any analysis of stock exchange.

- Liquidity as market depth

This kind of liquidity will research turnover ratio of individual companies listed on the stock exchange.

c) Indices

Indices are an effective indicators of market movement and every stock market has at least one (Becket, 2014). As Arnold (2010) adds that analysis of individual company is not so effective if there is no possibility to compare them with others. Indices are an effective tool to see when one stock fall by few percent, if it was effected by the whole market, if the index fall also, or it happened because of some problem in the individual company (Arnold, 2010). When indices of two or more markets will be compared, study must be careful to compare the right once, because there is many indices calculated with different process, for example some include dividends, some do not (Arnold, 2010). To put it simply, market index is summarized according to Arnold (2010, p. 535) “a sample of shares is used to present a share market’s level and movements as a benchmark against which individual shares are judged.”

3.2.2.2 Comparison of PSE and WSE

As was discussed in literature review competitiveness of stock market depends on attractiveness of the market and attractiveness depends on its performance. After a short comparison of the economies that the chosen stock markets are in, this study will compare their performance in following categories:

1. Yearly Trade Values (Annual Turnover Value): possibly the most important factor of performance which shows the how much money went through the market.
2. Number of issues: this factor affects the attractiveness because it shows how many companies investors can choose from.
3. Market capitalization: this factor shows how big the market is and what the value is of every company there. Study will analyse market capitalization from few perspectives.
 - a. Total market capitalization: shows the size of the market
 - b. Average market capitalization: shows size of average company

- c. Market capitalization per 100 000 citizens: shows the size of the market with considering the size of the country
4. Turnover ratio: this factor practically shows the liquidity of the market by showing relation between total trade value and total market capitalization.
5. Indices: in this section study will analyse main index of both exchanges to see their performance.

After the analysis of the trends over time, study will analyses year 2014 by comparing values in 5 categories:

1. Total trade value
2. Number of issues
3. Total market capitalization
4. Average capitalization
5. Turnover ratio

To analyse the impact of the size of economy, this study will analyse this in three different ways.

1. Total: In each category the market with higher value will get 100% and the market with smaller value will get percentage which will be calculated by smaller value divided by higher value (SV/HV).
2. GDP consideration: this way will consider the size of the economy. Three of total five categories will be edited by the size of the economy: Total trade value, number of issues and total market capitalization. Other two categories are not affected by the size of economy. The value of the market from smaller economy will be multiplied by a number which captures how much smaller the economy is ($GDP_c = \text{higher GDP} / \text{smaller GDP}$). So the calculation in three chosen categories in case of market in smaller economy will be by following: value x GDP_c . The final calculation will be like in previous category.
3. Population consideration: this way will instead of GDP difference, consider difference in population. Calculation will be in form of previous category.

3.2.3 Research strategy for question about merger

To answer the question whether PSE and WSE should merge will help us a survey, specifically interview.

3.2.3.1 Survey

Survey is the communicative type. This study will question others to gather their opinions and knowledge about our chosen topic. Survey is also more efficient and economical than observation, moreover this study would not be able to answer the main question by simply observing (Blumberg, Cooper & Schindler, 2011). Gathered data are interactive, which allow us to develop understanding of the whole topic, and rich of information, there can find a new links that have not been thought of. However the sample is smaller, is difficult to compare and have bigger possibility to be misinterpreted (Blumberg, Cooper & Schindler, 2011).

3.2.3.2 Qualitative interviews

Besides comparison of stock exchanges, the main question will be answer by interviews with economists. The answers will be send and collect via email, which means a communication-based research method is used. “A communication-based research method is one where email or a similar communication medium is the platform from which the data collection instrument is launched” (Blumberg, Cooper & Schindler, 2011, p. 652).

Unavailability of interviewee are not an obstacle because the questions does not have to be answered immediately. Participant of an interview has more time to think about an answer, their answer are then more considered because of the more time participants have (Blumberg, Cooper & Schindler, 2011).

This study is also aware of disadvantages of online personal interview, such as it can take time to receive answers to questions because it is not answered immediately and it is more difficult to ask follow-up questions. And there is less spontaneity in answers because interviewee can think about their answers and change them (Blumberg, Cooper & Schindler, 2011).

In this study a structured interview will be used, which will contain fixed initial questions, however to avoid disadvantage of structured interview which is unavailability of follow-up questions, which can ask further about things mentioned by interviewee, and then follow-up questions can be send after. In addition there can be used advantages of structured interview such as minimization of differences between more interviews, standardization of the process (Bryman & Bell, 2011).

As Cameron and Price (2009) mentioned, email interviews can be surprisingly effective. Email interviews usually start with list of questions and once they are answered, follow-up questions can be used to target new findings from the answers.

In this case is a need to find appropriate participants which are qualified to answer or question. Basically interviewees must possess the information that are needed to answer investigative questions of this study and also they must understand their role as the provider of relevant and accurate information.

To analyse data from interview, there is a need to analyse them carefully, because as an outcome this study needs trustworthy answer and credible conclusion. Interviews can be informational overload and this study needs convincing and strong evidence to support (Cameron & Price, 2009).

Answers from the interview will be analysed and main findings will be presented in discussion.

3.3 Limitations

This study is aware of its limitations which are related to this research.

Primary research is conducted only with two respondents, even though they are qualified professionals, research objective is a really controversial question and every economist has different point of view. This study contacted Dusan Jalovy which is analyst of financial markets for UniCreditBank and Jaroslav Brychta, analyst for X-Trade Brokers. These experts are respected professionals by economic websites and TV's. Because interviews contains subjective information, it will be used in discussion to support and compare with study's findings, but not as main information.

4 Findings

The aim of this study is to compare Prague Stock Exchange and Warsaw Stock Exchange and answer if they should merge. Firstly study will analyse individual markets with short background and history at the beginning, then will compare them. In discussion if these findings study will include information from interview to compare them and add them to this analysis.

4.1 Analysis of Prague Stock Exchange

Prague Stock Exchange (PSE) was founded in 1871 and in this era before World War I and even before the existence of the First Czechoslovak Republic, the PSE was one of the strongest financial and commodity markets in Europe. Prague was a central place of trading sugar for the whole Austro-Hungarian Empire. After the First World War in 1919 and establishing an independent Czechoslovakia in 1918, trading of goods were not part of the PSE anymore, but trading of securities became its main purpose. In 1920 the PSE had to establish the Prague Clearing Bank with a purpose to organise exchange trades, because with such a demand, direct trading was no longer possible (Prague Stock Exchange, 2013).

Due to hyperinflation in Austria and fall in Vienna Stock Exchange, foreign money moved from this risky market to countries nearby, including Prague Stock Exchange (Moore, 2006), which helped to surpass the Vienna Stock Exchange in importance (Prague Stock Exchange, 2013).

Due to occupation of Czechoslovakia by Germany leaded by Hitler in March 1939 stock Exchange saw extremely fall in trading and in 1943 the Prague Stock Exchange was closed. The stock exchange was not needed for a communist regime, who took over control, and it was closed for good in 1948 (Prague Stock Exchange, 2013).

After the fall of communist regime in 1991, the Prague Stock Exchange opened again in May 1992, with a big goal to privatize national companies to the hands of its citizens. This generated almost 7 million shareholders (Population of Czech Republic is more than 10 million), but majority of them sold their shares. Privatization offered 1,629 issues by the PSE, from the whole number of 2,031 companies. However most of this issues were only short term, due to liquidity majority of them left the stock market and from this stage the number of listed shares continues to fall (Prague Stock Exchange, 2013).

The PSE is from main part owned by The CEE Stock Exchange Group (CEESEG) which can be seen as a first step of consolidation in CEE region. CEESEG owns stock exchanges in

Budapest (Hungary), Ljubljana (Slovenia), Vienna (Austria) and of course Prague, Czech Republic.

As CEESEG (2015a) mentioned advantage of the PSE, “The Prague SE is one of the most profitable markets in the world in terms of dividends paid out. In 2013, the dividend yield of 5.19% by far exceeded not only other CEE markets, but also developed markets in the EU and US.”

Domestic Market Capitalization

as of January 2015, in EUR bn

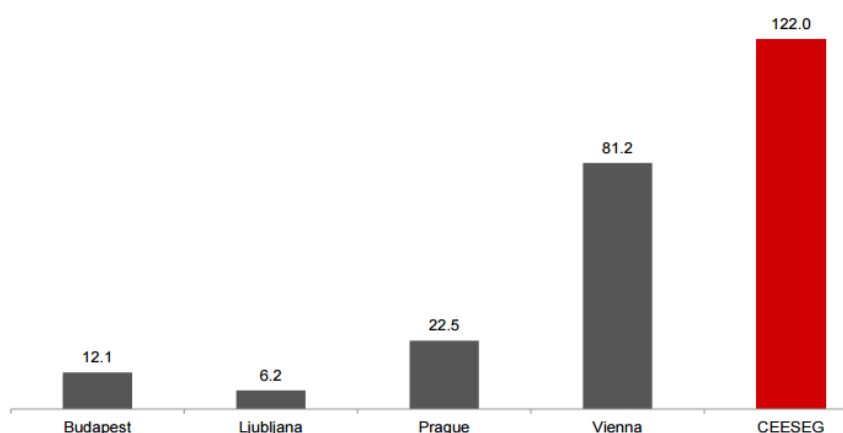


Figure 5: CEESEG Domestic Market Capitalization (CEESEG, 2015b).

As can be seen from Figure 5 the PSE had 22.5bn EUR market capitalization which is 18.4 percent of the whole group. The PSE is second biggest market of the whole group, however the Vienna Stock Exchange is almost four times bigger.

Total Turnover YTD

as of January 2015, in EUR bn

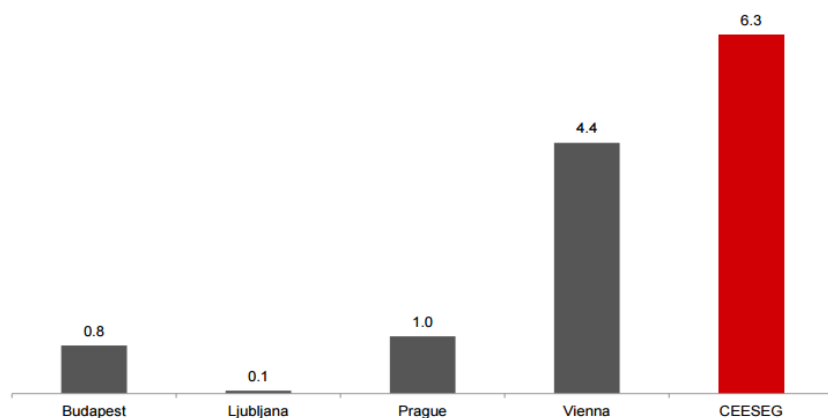


Figure 6: CEESEG Total Turnover YTD (CEESEG, 2015b).

As can be seen in Figure 6 the annual turnover is even smaller in comparison with Vienna, the PSE has only 15,9 percent of the whole turnover with Budapest right behind Prague with 12,7 percent.

4.1.1 Number of issues and market capitalization

Year	Number of Issues (Dec. 31)	Change in number of issues	Market Capitalisation (CZKbn)	Change in market capitalisation	Cap / Num
1994	1028		353,1		0,34
1995	1716	67%	478,63	36%	0,28
1996	1670	-3%	539,24	13%	0,32
1997	320	-81%	495,68	-8%	1,55
1998	304	-5%	416,2	-16%	1,37
1999	195	-36%	479,65	15%	2,46
2000	151	-23%	442,89	-8%	2,93
2001	102	-32%	340,25	-23%	3,34
2002	79	-23%	478,04	40%	6,05
2003	65	-18%	644,48	35%	9,92
2004	55	-15%	975,77	51%	17,74
2005	39	-29%	1330,81	36%	34,12
2006	32	-18%	1592	20%	49,75
2007	32	0%	1841,68	16%	57,55
2008	28	-13%	1091,73	-41%	38,99
2009	25	-11%	1293,48	18%	51,74
2010	27	8%	1388	7%	51,41
2011	26	-4%	1060,77	-24%	40,80
2012	28	8%	1142,09	8%	40,79
2013	26	-7%	1093,48	-4%	42,06
2014	23	-12%	1040,29	-5%	45,23

Table 1: number of issues and market capitalization of WSE



Figure 7: Market Capitalization and number of issues of PSE

As was discussed in history of PSE, this market was used as a tool to privatize state owned companies after communist era. 1,629 companies were privatized in 1994 and 1995, which helped massively increase number of issues offered by PSE. However as can be seen in Figure 7, the market capitalization did not increase with the number of issues. In 1995 the number of companies were increased by 67 percent and market capitalization only by 36 percent, however this was improved in 1996 where the PSE started to remove illiquid shares. In 1996 despite increase of 3 percent in number of shares, the capitalization increased by 13 percent. In 1997 the PSE done a massive reduction of illiquid instruments with decrease 81 percent, how good this decision was, can be seen in only 8 percent decrease in market capitalisation. All data can be seen in Appendix A.

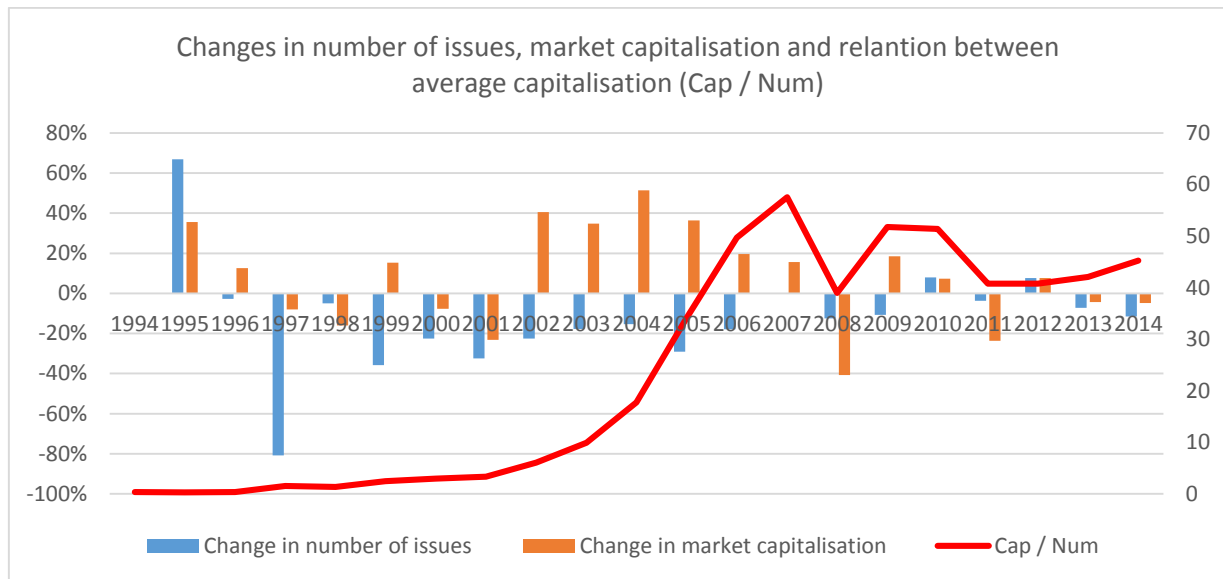


Figure 8: Changes in number of issues, market capitalisation of PSE

As can be seen in figure 8, the relation between number of issues and market capitalisation is improving, which is a good sign, because stock exchange does not need small illiquid instruments, which are not traded really often and drive average capitalization of the whole market down. However due to world financial crisis, average capitalization decreased its value and went back to amounts from year 2006.

4.1.2 Liquidity

This study already discussed liquidity in previous section and readers could see how the PSE improved its average capitalization since privatization in 1990s. All data can be seen in Appendix A.

4.1.2.1 Liquidity as immediacy

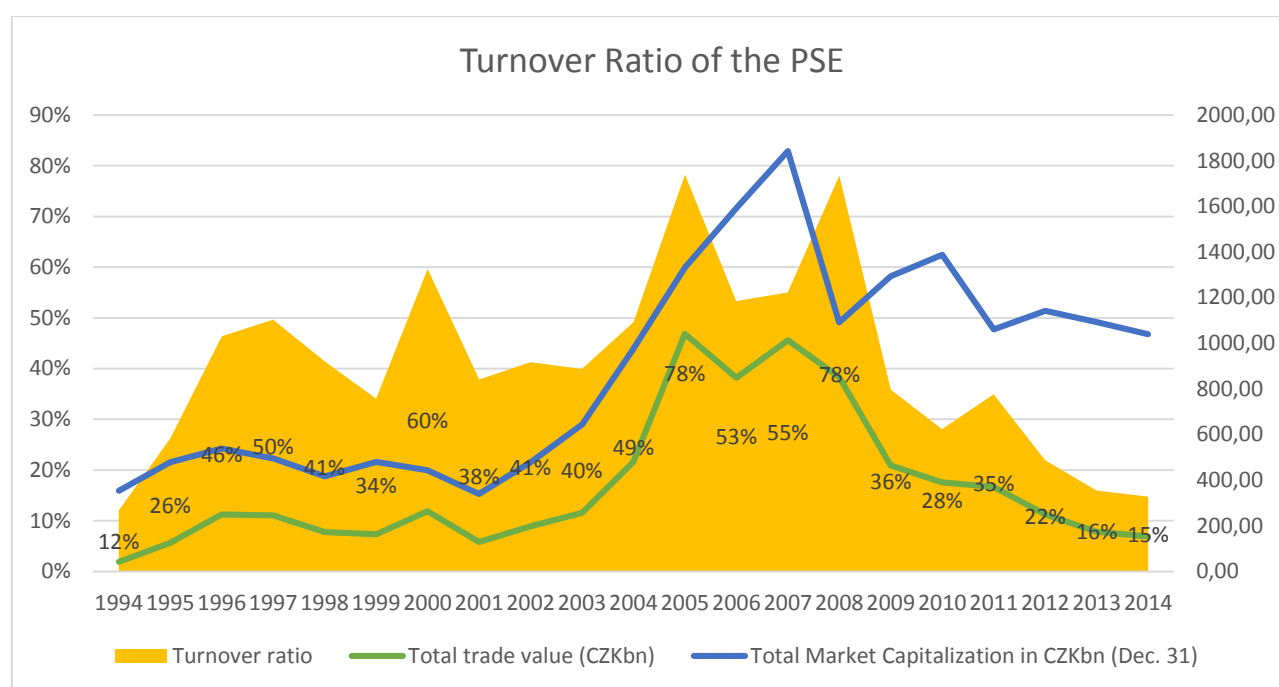


Figure 9: Turnover ratio of the PSE

The green line in Figure 9 shows how much money went through PSE, and there can be seen that this market was relatively increasing its trade value over time until year 2005 and probably as an effect of global financial crisis, in 2008 this value went down and this trend is seen as still continuing until 2014, however the slowing decrease can be seen as a sign of change in this trend.

As can be seen in Figure 4, the turnover ratio of the PSE is falling since the market was affected by global financial crisis in 2009 and have not recovered yet. This can be seen as an evidence of decreasing liquidity of this stock market from Czech Republic.

As was discussed in Methodology, this study has the opportunity to compare 22 percent turnover ratio from 2012 with ratios from other countries' markets.

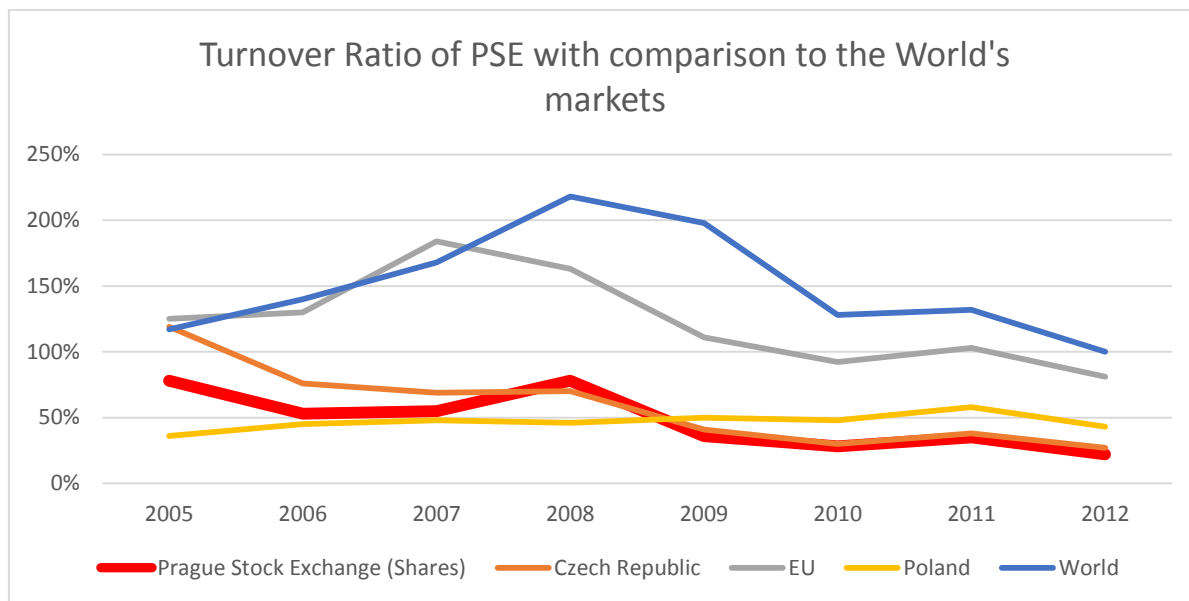


Figure 10: Turnover Ratio of PSE with comparison to the World (The World Bank, 2015).

As can be seen in figure 10, the PSE is worse than the ratio of the whole Czech Republic, even though in 2008 was better, which only prove us that the PSE in 2008 was on the peak of its success and then affected by financial crisis is falling down. Also can be seen that the PSE effects the Czech Republic in a big way. Excluding Poland which is becoming financial centrum of CEE region, similar trends can be seen at certain time across all chosen markets. However the unpleasant finding is that the whole equity market of Czech Republic has in 2005 almost the same turnover ratio (119%) as average of European Union (125%), however the PSE had only 78% which was the best ratio that the PSE had since it was funded in 1993. In 2012 can be seen a massive change in chosen radio with only 22 percent for PSE, in comparison with the whole equity market in Czech Republic (27%) it does not look so unfortunate, but with the EU ratio (81%) it does seems like this stock market lost its liquidity.

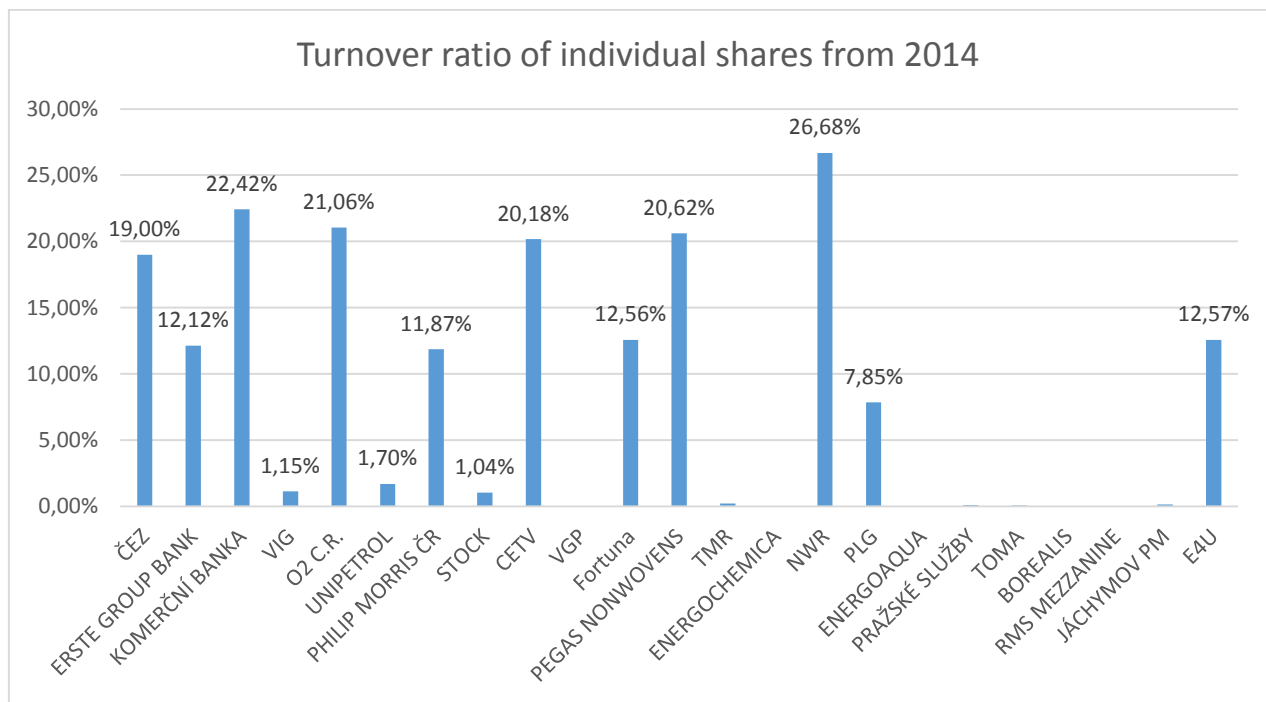


Figure 11: Turnover ratio of individual shares from 2014 of PSE

As can be seen from figure 11, the PSE has lack of liquid shares, with only 14 companies which turnover ratio is bigger than 1 percent, 10 companies bigger than 10 percent, and 5 companies bigger than 20 percent. To put it in perspective the Prague Stock Exchange has only 43,5 percent of its issues which turnover ratio is bigger than 10 percent and 21,7 percent of issues which ratio is bigger than 20 percent which are shares with bigger liquidity compared to others from the PSE.

This analysis shows that the PSE has 9 shares from overall 23 which total trade value was smaller than 1% of its market capitalization which shows a big problem for this market. Even 5 companies with ratio bigger than 20% should not be seen as very liquid from world view, however in local view they can be seen as in that way.

4.1.2.2 Liquidity as market depth

Average capitalization as was analysed it in previous section is not the best example to evaluate the PSE, because the biggest two shares from the whole 23 that PSE had listed in 2014 had 53,46% of the capitalization of the whole PSE.

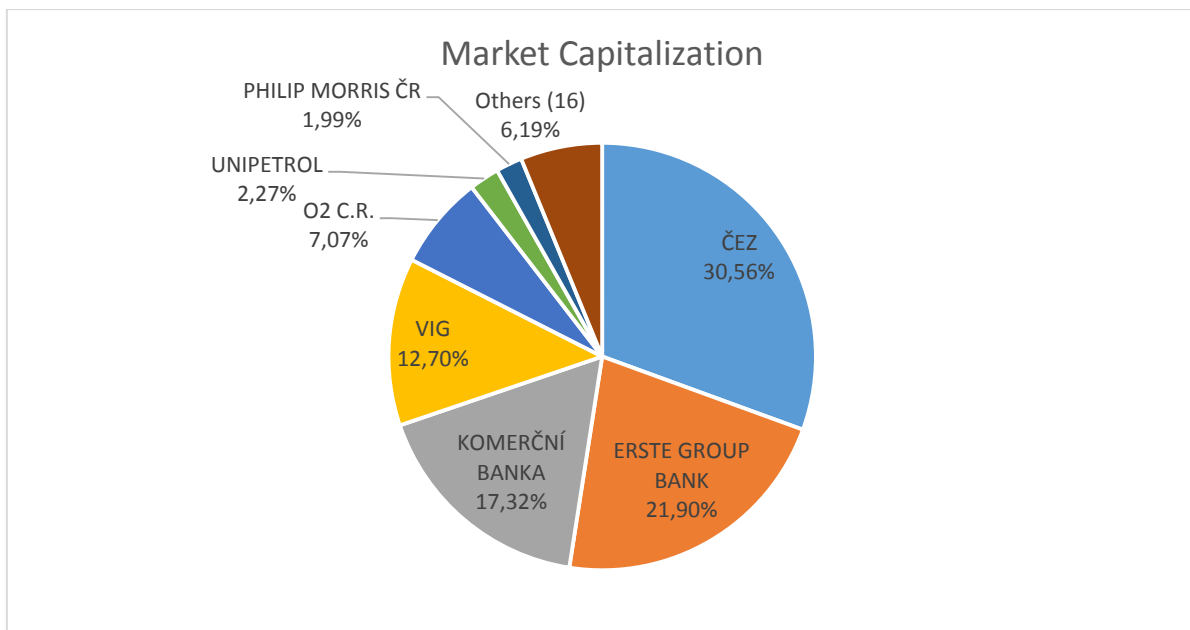


Figure 12: Market capitalization of PSE

Figure 4 shows how the PSE has lack of liquid shares. As was mentioned in Literature Review chapter 1.3, section Liquidity, a stock exchange has a problem with liquidity if there is only few big securities, because the whole index of stock exchange will be affected by performance of few shares and this is the case of the PSE. Two biggest companies effects half of the index.

4.1.3 Indices

4.1.3.1 Index PX

The main index of the PSE is a PX index, which price index of blue chips issues. This index represent 13 biggest shares of the PSE. Maximum allowed weight of one share in this index is 20 percent (Prague Stock Exchange, 2015c). From history of this index readers can see that 4 biggest companies has usually about 80 percent of the whole weight, which represent illiquidity of this market. In January 2015 it is 80.3 percent for 4 biggest shares.

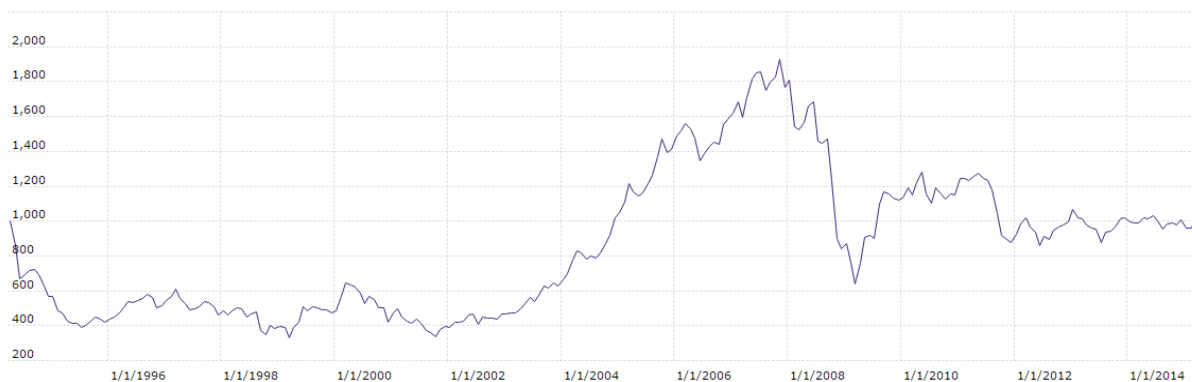


Figure 13: Index PX (Prague Stock Exchange, 2015b).

As can be seen in Figure 13, the value of this index is slightly above 1000 points, as it was at the beginning of 2005, then the index increased its value to 1925 points in November 2007. Affected by global financial crisis, the PX index fell to 637 points in March 2009, then see sign of recovery can be seen, following decrease at the end of 2011 to 873 points. Since 2012 the index is floating between 850 and 1100 points. In February 2015 around 1000 points which is his starting Base value. From this graph can be seen that the Index PX which represent the whole PSE is not in good condition as well as the whole PSE, which has not been able to return to performance which produced before global financial crisis.

4.1.3.2 Index PX-GLOB

This index represent all shares from the PSE, also with maximum weight 20 percent for one company. However even though index PX-GLOB represent 23 companies, instead off 13 as it was in case of index PX. And again, in January 2015 4 biggest companies of the PSE represent 77.2 percent of the whole index, of the whole 23 companies, which shows that the index will not be much different from the main one (Prague Stock Exchange, 2015d).

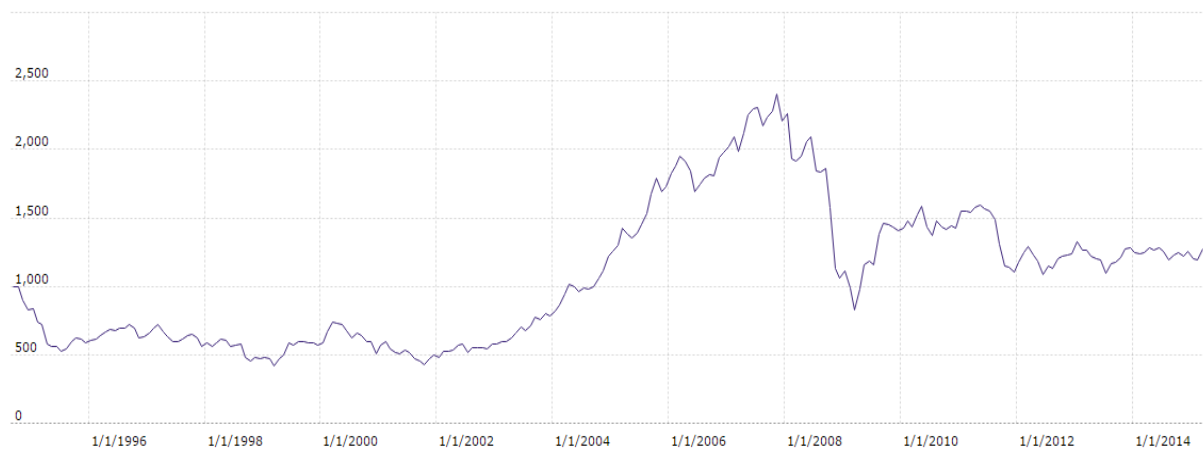


Figure 14: Index PX-GLOB (Prague Stock Exchange, 2015e).

As can be seen in Figure 11, this index looks similar to the main one. After global financial crisis index fell to 828 points, then it went slightly up and since 2012 index flows between 1050 and 1300 points. This chart represent the whole idea about illiquidity of the PSE, because even though index PX represent only 13 from 23 companies, index PX-GLOB is massively affected by its performance.

4.1.4 Conclusion of PSE analysis

As this study analysed, the Prague Stock Exchange showed some potential before global financial crisis, but after that decrease in number of issues can be see, as well as market capitalization and even though the market have seen some good sign of recovery, turnover ratio of the PSE proved that liquidity of this market is still decreasing since 2008. If this market wants to survive, management of the Prague Stock Exchange should do some revolutionary steps to improve its performance and potential.

4.2 Analysis of Warsaw Stock Exchange

The Warsaw Stock Exchange was founded in 1817, when Poland was divided among Russia, Austria-Hungary and Germany. The market grew during 19th century, however was closed during The First World War in 1915 when Warsaw was occupying by Germany. After Poland regained independence in 1918, WSE was opened again in 1919. The market was affected by world financial crisis in 1929 and once it was recovered, the market had to be closed again because of Germany - Russian invasion in 1939 (Czerwiński, 2014).

After that period communist regime took over as well as in Czech Republic, the Poland financial market had to be closed, any shares or trading with currencies did not exist. After the fall of this regime in 1989, the WSE was open again in 1991 in the building of former Central Committee of Communist Party (Czerwiński, 2014).

The WSE is focusing in its strategy to move forward, to attract foreign companies and to be main stock exchange in CEE region. It has already bigger market capitalisation than Vienna, its main rival, not to mention Prague or Budapest (Cienski, 2011).

As Financial Times mentioned “Unlike other emerging European bourses, the WSE was always strictly regulated and professionally run, which kept out dubious companies that ruined the reputations of some smaller exchanges”(Cienski, 2011). The Warsaw Stock Exchange has succeeded to become companies’ goal to list their shares on this market. Even CEZ, Czech energy company which is partly owned by Czech government is listed in this Poland market as well as the Czech one, because this market offers prestige and liquidity (Cienski, 2011). There is no company from Poland which is listed on Prague Stock Market, however there are 3 companies from Czech Republic listed in Warsaw (Warsaw Stock Exchange, 2015).

Market capitalisation of the WSE was in 2011 35 percent of Poland’s GDP, this is less than half than it is in developed markets, so even though the WSE is massively growing in the CEE region, it has still room to grow. Sign of good past strategy is that about 47 percent of trading volume is from foreign investors (Cienski, 2011).

. The WSE has also biggest number of new listings, 105 IPOs, which is 40 percent of all new listening in Europe, however value of this listening is much lower than in case of London Stock Exchange, €731m vs. €5.1bn. But still better than its main rivals like Prague with 3 new listings and Vienna with zero (Cienski, 2013).

The Warsaw Stock Exchange has problem with liquid shares, as article from Financial Times (Cienski, 2013) researched that only a few companies are liquid enough to attract institutional investors. However improving liquidity is one of the goals in strategy of this market.

Warsaw's problem could be that it is the largest market in the CEE region, but still far behind Istanbul, Moscow or Oslo with slowing growth, slowing Poland economy and threats of pension reform which would reduce the amount of investment from government, the Warsaw Stock Exchange is stagnating and it is "in zone with no name", it is not seen as emerging market anymore, but also not developed (Cienski, 2013).

4.2.1 Number of issues and market capitalization

	Number of issues	Change in number of issues	Market capitalisation (PLN mil.)	Change in market capitalisation	Cap / Num
1991	9		161		17,88889
1992	16	78%	351	118%	21,9375
1993	22	38%	5845	1565%	265,6818
1994	44	100%	7450	27%	169,3182
1995	65	48%	11271	51%	173,4
1996	83	28%	24000	113%	289,1566
1997	143	72%	43766	82%	306,0559
1998	198	38%	72442	66%	365,8687
1999	221	12%	123411	70%	558,4208
2000	225	2%	130085	5%	578,1556
2001	230	2%	103370	-21%	449,4348
2002	216	-6%	110565	7%	511,875
2003	203	-6%	167716	52%	826,1872
2004	230	13%	291698	74%	1268,252
2005	255	11%	424900	46%	1666,275
2006	284	11%	635909	50%	2239,116
2007	351	24%	1080257	70%	3077,655
2008	374	7%	465115	-57%	1243,623
2009	400	7%	715821	54%	1789,553
2010	426	7%	796482	11%	1869,676
2011	438	3%	642863	-19%	1467,724
2012	450	3%	734047	14%	1631,216
2013	471	5%	840780	15%	1785,096
2014	472	0%	1252958	49%	2654,572

Table 2: number of issues and market capitalization of WSE

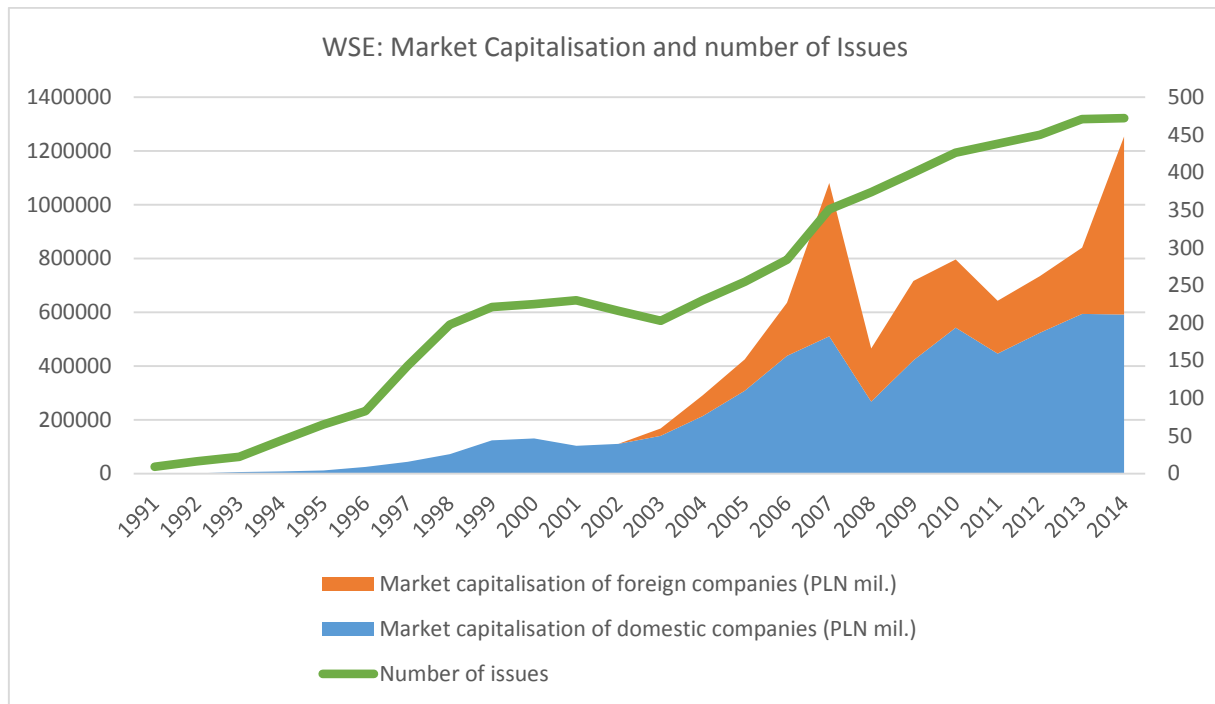


Figure 15: Market Capitalisation and number of Issues of WSE

Because the strategy of Warsaw Stock Exchange is also to be attractive for foreign companies, different type of graph was used than in previous market to properly show how foreign companies affected market capitalisation of the whole market. In figure 15 can be seen how the WSE is massively increasing its market capitalisation and number of issues. Since 2003 where foreign companies have started listing its shares, a rapid increase can be seen in its capitalisation with peak in 2007, followed with fall by 57% in 2008 due to world financial crisis. However as can be seen in years 2009 – 2014, the WSE has dealt with financial crisis and its market capitalisation is higher than it was in 2007. This trend can be seen in the whole market capitalisation as well as in capitalisation of only domestic companies. This graph proves that this market is in good condition because it has been able to increase market capitalisation and number of issues almost year by year, excluding external affects like global financial crisis. Graph suggest that growth strategy of management of the WSE and polish government was a successful one and this market has been able to dealt with global financial crisis in a way like not many market in CEE region. All data can be seen in Appendix B.

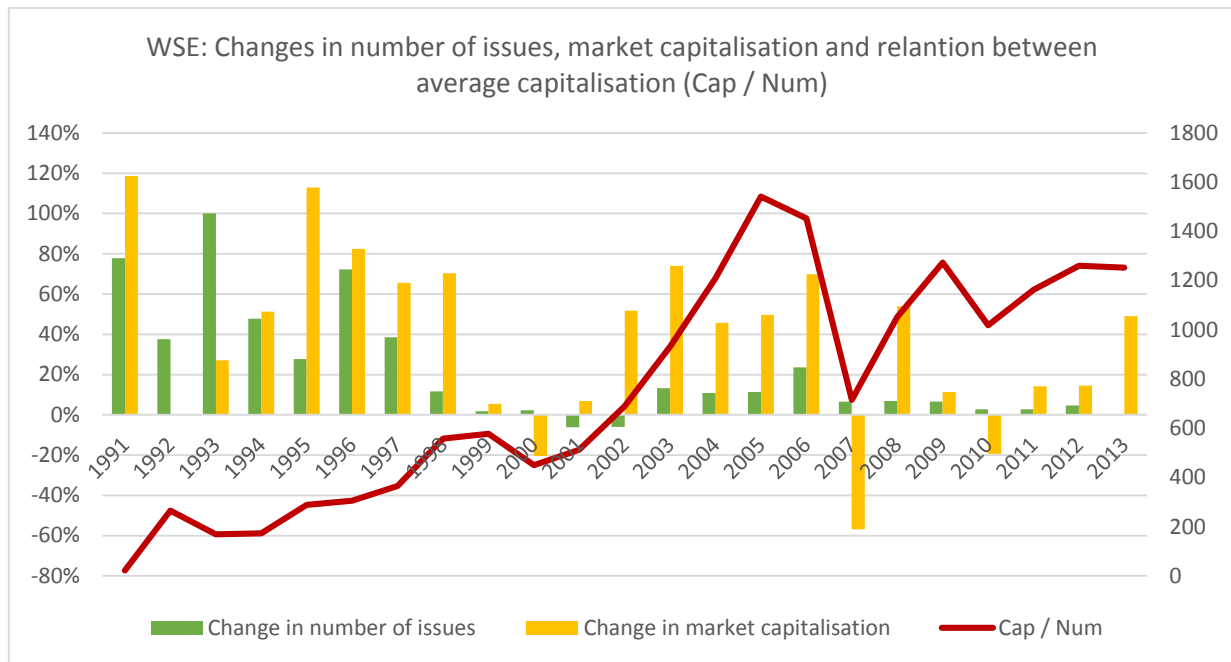


Figure 16: Changes in number of issues, market capitalisation and relation between average capitalisation (Cap / Num) of WSE

As can be seen in figure 16, the WSE did not go through many decreases in market capitalisation as well as in number of issues. The average capitalisation has touched its peak in 2005 and not returned back yet, this may be a result of listing of smaller companies, which can be a problem for WSE because if there are not many more big companies which can be listed on this market, WSE cannot growth with that speed as before and will not come closer to markets like Istanbul, Moscow, or Oslo.

4.2.2 Liquidity

In previous section this study already mentioned average capitalization which has been increasing until 2005 and from that year the WSE is struggling to increase this factor, which can be considered as one of the measure of liquidity. All data can be seen in Appendix B.

4.2.2.1 Liquidity as immediacy

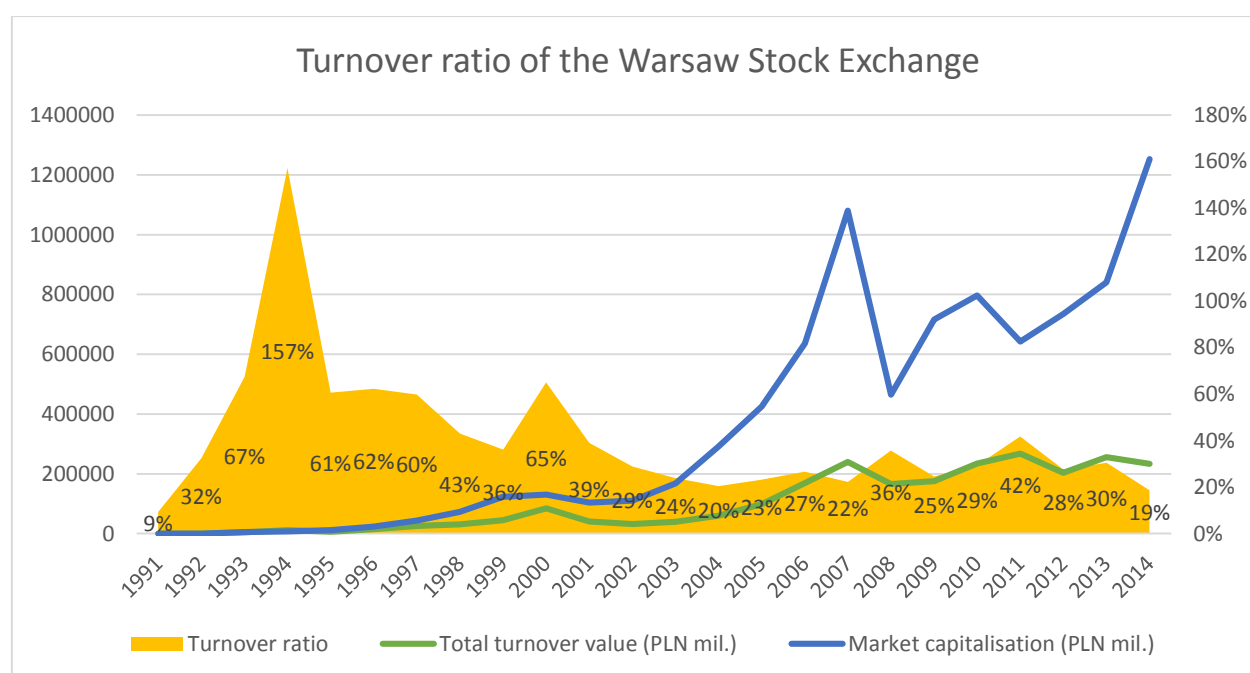


Figure 17: Turnover ratio of the WSE

As can be seen in figure 17, even though management of the Warsaw Stock Exchange is succeeding in attracting new companies to list their shares, it is struggling to increase value of trades. Since 2000, total turnover value increased by 175% and market capitalisation increased by 863%, however including market capitalisation of foreign companies for which this market is not the prior and only one, can be unfair, but if this market wants to be treated like a developed one, this study has to include these shares. Market capitalisation of domestic companies has been increase by 354% since 2000, which suggest that WSE has a problem to attract investors who are willing to trade on this market. In 1990's turnover ratio has been about 60%, in 2014 in has the worst turnover ratio ever with only 19%, excluding 1991 which was the first year of this market. Interesting thing can be that in 2008 during global financial crisis the turnover ratio was bigger by 14 percent points than year before, due to massive fall in market capitalisation, but smaller change in total turnover value.

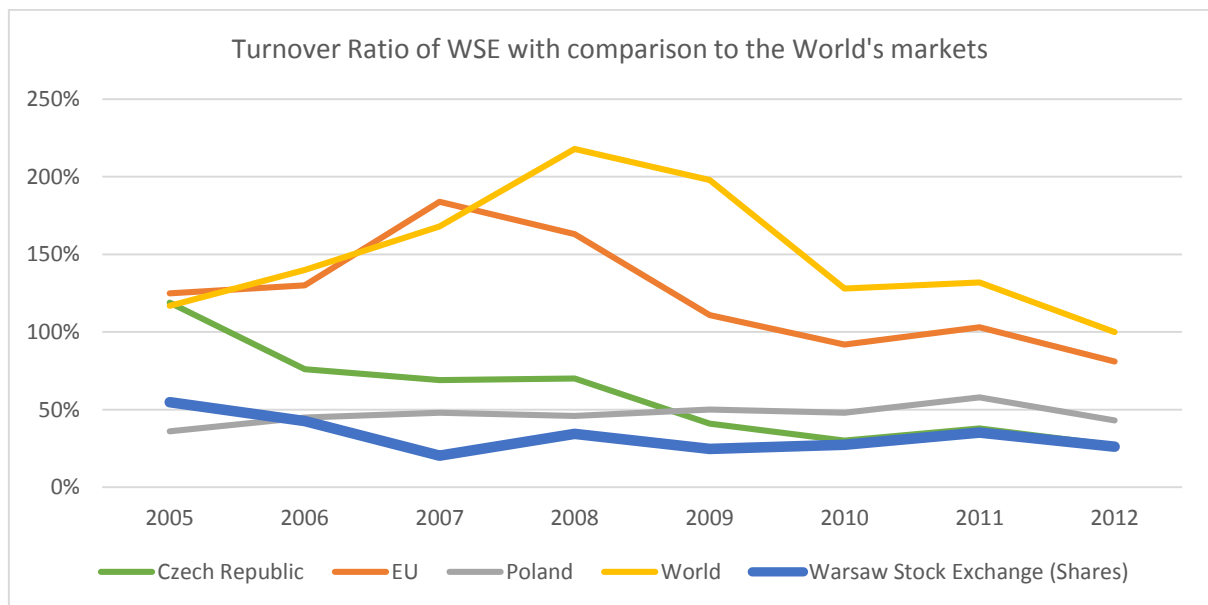


Figure 18: Turnover Ratio of WSE with comparison to the World's markets

From the figure 18 is visible that the WSE is not doing well in comparison with the World or EU average. Even the whole Poland market is doing better than this Warsaw market, which is prior and most important Polish market. It is interesting that the whole Poland is holding relatively the same turnover ratio, even though the world's market's ratios are falling, but the WSE's ratio is decreasing from 55% in 2005 to 26% in 2012.

Turnover ratio of individual shares

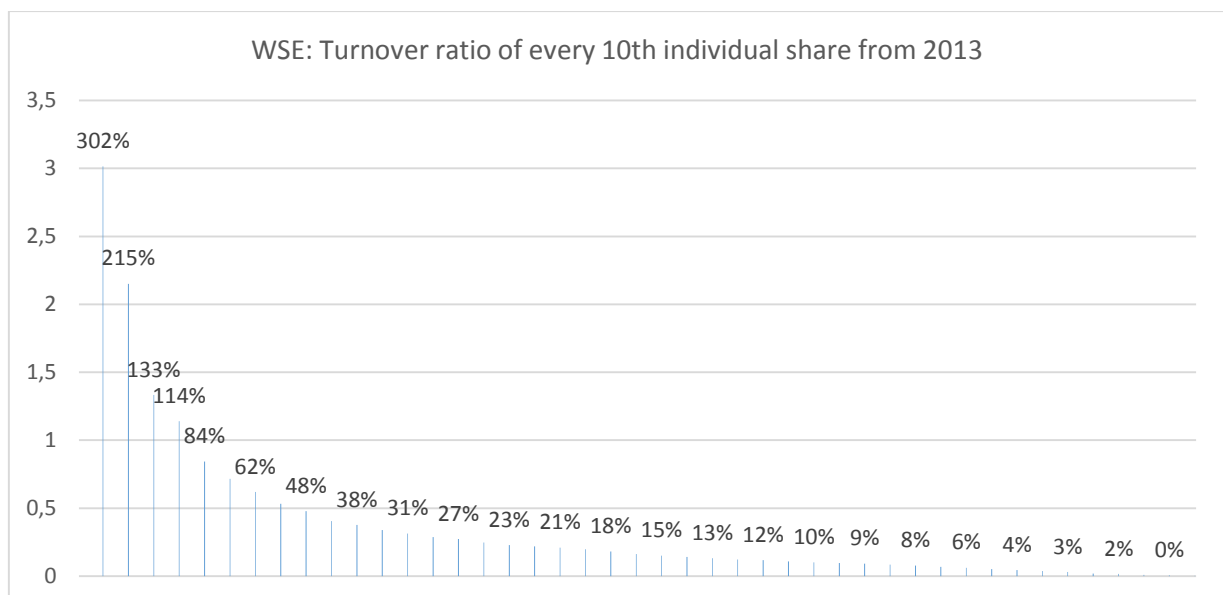


Figure 19: Turnover ratio of every 10th individual share from 2013 of WSE

Because the Warsaw Stock Exchange had in 2013 471 listed companies, this study selected every 10th share by its turnover ratio to show in figure 19, to give an overview of turnover ratio

of individual shares. Average turnover ratio of the WSE is 51,7% however median is only 15,88%, which shows low turnover ratio of this market as a whole. 42 shares which is only 8.9% of all companies has turnover ratio higher than 100%. 87 shares (18,4% of all companies) has 50% or more in turnover ratio. 239 companies (50,6% of all companies) has turnover ratio 18% or less, which is proves our previous suggestion that WSE has problem with liquidity.

4.2.2.2 Liquidity as market depth

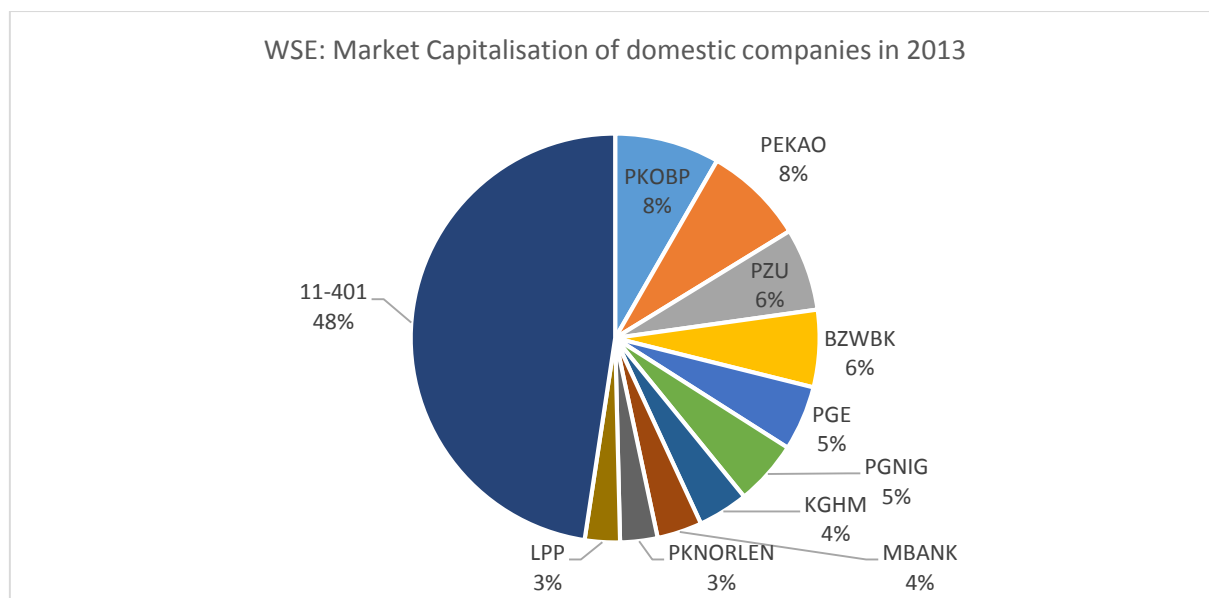


Figure 20: Market Capitalisation 2013 of WSE

As can be seen in figure 20, 10 from 401 domestic companies make 52,4% of the whole market capitalisation of WSE. When 2,5% of all companies shape more than half of the market capitalisation it is not a good sign of good conditions and developed market. Liquidity as a market depth is in case of the WSE really struggling and only few companies affects the whole market.

4.2.3 Indices

4.2.3.1 Index WIG20

This index is the main index of WSE, has been calculated since April 1994. Index contains 20 biggest and most liquid companies. It is price index, because of that it is calculated based on prices of these share and dividends are excluded (Warsaw Stock Exchange, 2015b).



Figure 21: Index WIG20 (Warsaw Stock Exchange, 2015c)

The index started in 1994 at 1000, since it has touched its bottom at 577 points in 1995, went up to 2400 points in 2000 and then fell back to 1000 in 2001. After that a strong growth can be seen, until November 2007 when index touched its peak at 3940 points. It was falling since then until February 2009 where the index went below 1400 points. In 2011 index almost went through 3000 points, but fell back to 2100. Since 2012 the index WIG20 flows between 2300 – 2600 points. This index shows that in this sense the WSE has not been able to recover from global financial crisis and it is struggling last few years.

4.2.3.2 Index WIG

This index is the first index of the WSE which started in April 1991. Index comprises all companies listed at Main list of WSE. Index is however limiting share of a single company and sector to avoid changes based on movement of one share which would have big effect based on its capitalisation. Index is total return index, it is affected by price of shares, dividends and subscription right's income (Warsaw Stock Exchange, 2015b).



Figure 22: Index WIG (Warsaw Stock Exchange, 2015d)

In figure 22 where is performance of WIG index since its start can be seen similar trends as in WIG20 index. However this index also started at 1000 points as previous WIG20 index, but peak of index WIG was in 2007 at 67 773 points, which is in comparison with index which contain 20 biggest shares and had its peak at 3940 points, good sign because performance of all shares is much higher than just 20 biggest shares. However study have to consider that this index includes dividend payments which can have big effect. Also since 2011 can be seen bigger increase in performance if this index, which suggest that smaller shares than the 20 biggest are doing better.

4.2.4 Conclusion

The Warsaw Stock Exchange has showed a good performance in its growth since its start. Management has showed an effective job with attracting foreign companies, however last few years there can be seen a stagnation. Even though market capitalisation is improving, market is unsuccessful with increasing trading value and to improve liquidity. Warsaw Stock Exchange is at this time biggest stock exchange in CEE region, however it does not have the needed growth to become something bigger and to compete with markets in Istanbul, Moscow, or Oslo.

4.3 Comparison of Prague Stock Exchange and Warsaw Stock Exchange

As was mentioned in individual analysis, both stock exchanges have similar history. Both were founded in 19th century, closed during world wars and during communist regime. Warsaw Stock exchange opened again in 1991 and Prague Stock Exchange in 1992. Even though this two markets have similar history, they did not have equal opportunities: WSE was opened in a country with \$92,5 billion GDP in 1992 and PSE in a country with \$34,5 billion GDP (The World Bank, 2015a). Despite bigger GDP per capita in Czech Republic \$3,338.7 vs. \$2,411.9 in Poland, WSE was founded in bigger economy (The World Bank, 2015b). All data need for this analysis can be seen in Appendix C.

4.3.1 Overtime analysis

4.3.1.1 Yearly Trade Values

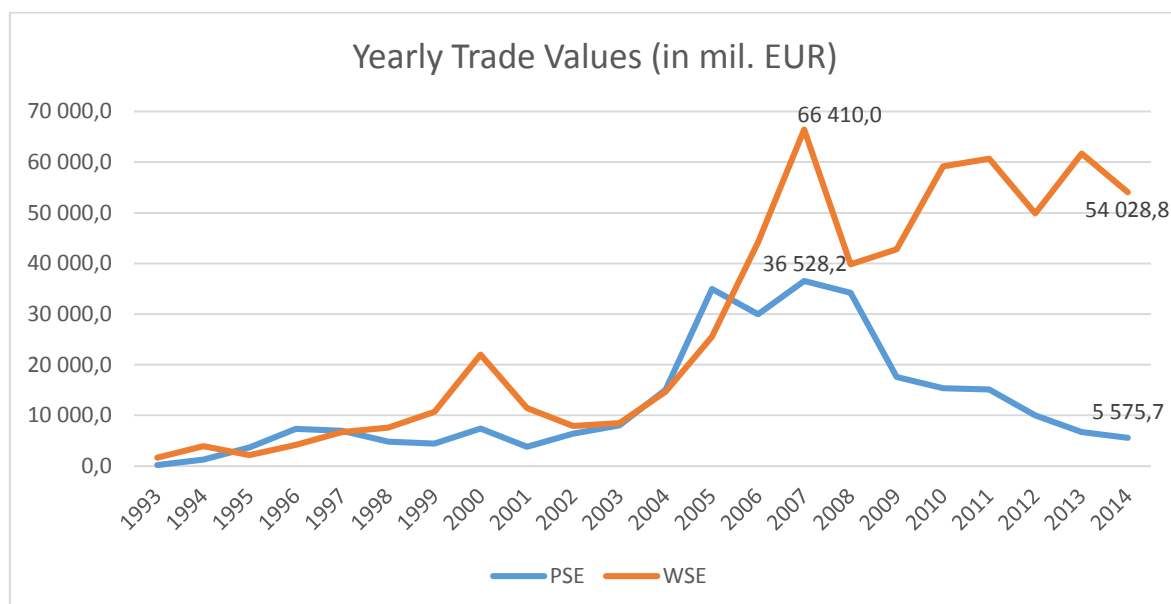


Figure 23: Yearly Trade Values

As can be seen in Figure 23, the fact that Poland is bigger economy did not have big effect on trade values in first few years. Even in 2005 the trade value of PSE was bigger, but after that maybe due to strategy to attract new foreign listing to the WSE and effectiveness of WSE's management, massive growth can be seen until 2007, then despite bigger fall in WSE trades their values were still bigger and they dealt with this fall in a short time. The main change in performance of these markets can be seen after global financial crisis when the PSE is still falling and WSE trade values are better than after the fall.

4.3.1.2 Number of issues

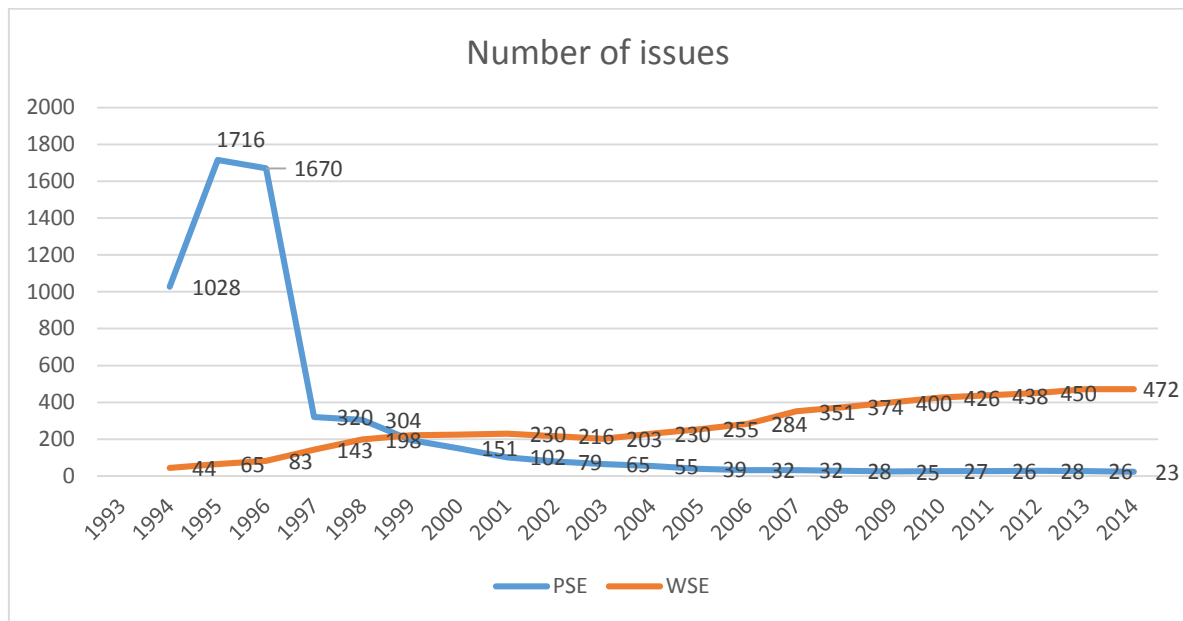


Figure 24: Number of issues

As study mentioned in individual analysis of PSE, the market was after the end of the communism used to sell publicly owned companies, however due to lack of liquidity most of them had to be removed from public trading. In Figure 2 in case of WSE can be seen constant increase of traded companies and in case of PSE is the opposite, constant decreasing of number of issues. 23 listed companies vs. 472 is a massive difference and WSE is seen as much developed market, however as will be discussed in next chapters, also the quality and liquidity of these shares is important.

4.3.1.3 Market Capitalization

a) Total Capitalization

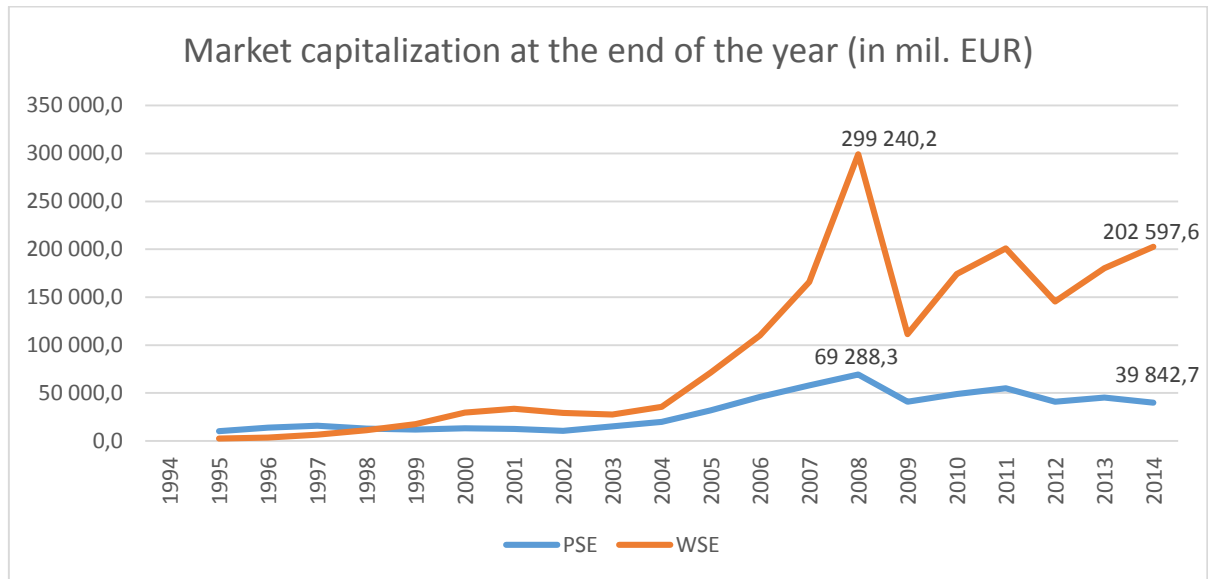


Figure 25: Market capitalization at the end of the year

As can be seen in Figure 25, until 1998 the PSE had a bigger capitalization despite being in smaller economy, this has changed in 1999 and since 2014 there can be see a big increase for WSE which can be due to increase of foreign companies in WSE. WSE has in 2014 67,7% market capitalization of the value it had on its peak in 2008 and PSE has 57,5% of the capitalization it had in 2008. This shows that PSE is smaller market and in addition also worst at dealing with problems in form of financial crisis.

b) Average market capitalization

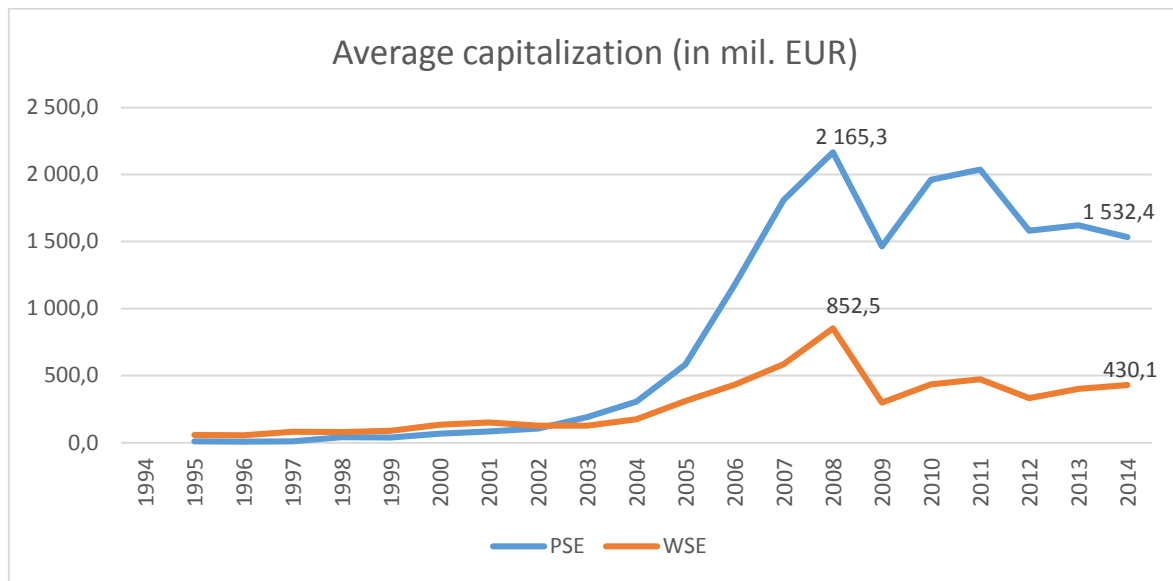


Figure 26: Average capitalization

As was mentioned in section about number of issues, the number only is not the most important, but also quality is important. In figure 26 can be seen that the Prague Stock Exchange is doing better in average capitalization of individual company and even though WSE has 19.4 times more listed companies, they don't have very liquid companies. Average capitalization 430,1 mil. EUR is only 28% of average capitalization of PSE which is 1532,4. Also PSE has decreased its average capitalization by 29% percent since its peak in 2008, but WSE has decreased it by 49,5%. This founding may suggest that the WSE is trying to have big total capitalization, but does not consider the quality of these new shares.

c) Market capitalization per 100 000 citizens

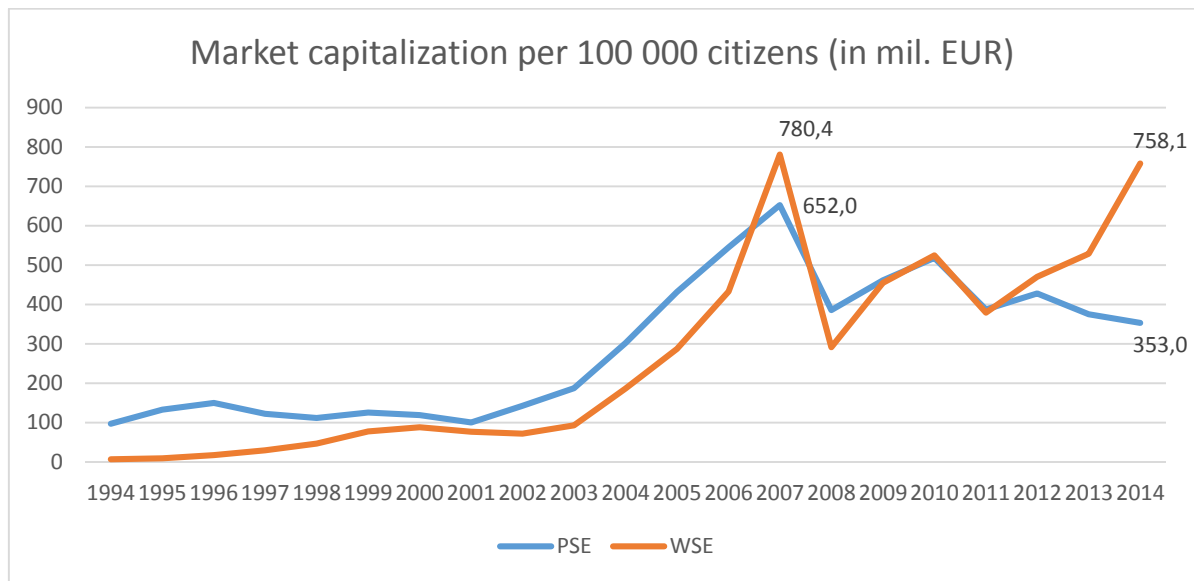


Figure 27: Market capitalization per 100 000 citizens

Czech Republic had in July 2014 population 10,627,448 and Poland had 38,346,279 (CIA, 2015). If study consider population to the comparison, this study could say that the PSE is as well developed as WSE if it has 27,7% of total market capitalization of WSE. As can be seen in figure 5, until 2006 the PSE had a bigger capitalization per capita than the WSE. Between 2007 and 2011 instant changes can be seen in which market is doing better in this indicator, however this stopped and in 2014 WSE has been better by 115% percent in market capitalization per capita.

4.3.1.4 Turnover ratio

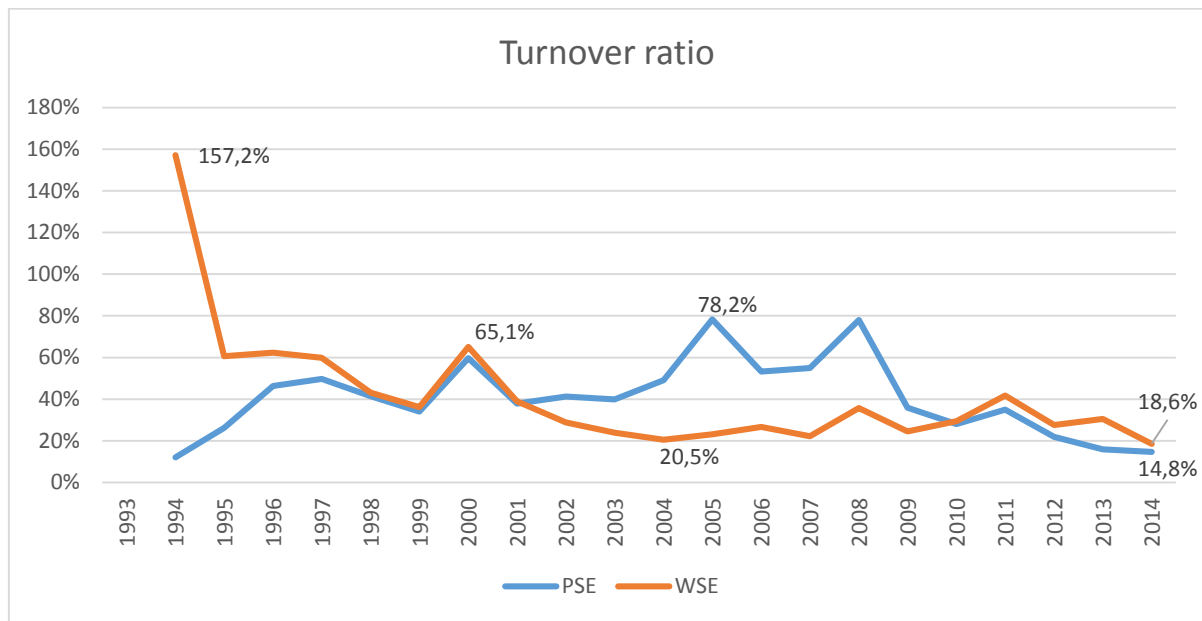


Figure 28: Turnover ratio

In figure 28, can be seen that the PSE was having good turnover ratio, much better than the WSE until the financial crisis. However turnover ratio of the WSE cannot be view as successful one even though it is higher than PSE since 2011. Both markets have serious problem with their trade values. WSE is increasing its market capitalization, but has difficulties to increase value of trades. PSE has opposite problem, market capitalization is slowly decreasing and total trade value is decreasing even faster. These problems of these two market are damaging turnover ratio over time.

4.3.1.5 Indices



Figure 29: Index PX vs. WIG20 (Stoog.com, 2015)

In figure 29, can be seen performance of main indices from both markets. PX from PSE and WIG20 from WSE are both calculated based on prices of their biggest and most liquid shares. Similar movements can be seen, with almost same performance few years before global financial crisis and also after that, however after that the recovery of index WIG20 shows a better conditions than index PX which felt lower than its opponent.

4.3.2 Analysis of 2014

4.3.2.1 Total analysis

	PSE	WSE
Yearly Trade Values	10,3%	100,0%
Number of issues	4,9%	100,0%
Market capitalization at the end of the year	19,7%	100,0%
Average capitalization	100,0%	28,1%
Turnover ratio	79,6%	100,0%
	214,4%	428,1%
	50,1%	100,0%

Table 3: Analysis of 2014: Total

As can be seen in Table 13 based on five chosen categories, competitiveness of Prague Stock Exchange was half of the value that Warsaw Stock Exchange received. PSE is leading only with average capitalization which shows that average company is bigger in Prague than in Warsaw.

4.3.2.2 GDP consideration

GDP of Czech Republic was in 2013 \$285.6 billion and of Poland it was \$814 billion (CIA, 2014b). In this analysis, values of PSE in first three categories were multiplied by 2,85, which is how much bigger is the Poland economy.

	PSE	WSE
Yearly Trade Values	29,4%	100,0%
Number of issues	13,9%	100,0%
Market capitalization at the end of the year	56,1%	100,0%
Average capitalization	100,0%	28,1%
Turnover ratio	79,6%	100,0%
	279,0%	428,1%
	65,2%	100,0%

Table 4: Analysis of 2014: GDP consideration

After consideration of GDP difference, the Prague Stock Exchange seems to be more competitive, however still far behind WSE.

4.3.2.3 Population consideration

Population of Czech Republic was in June 2014 10,627,448 citizens and 38,346,279 for Poland (CIA, 2014a). In this analysis, values of PSE in the first three categories were multiplied by 3,61, which is how much bigger is the Poland population.

	PSE	WSE
Yearly Trade Values	37,2%	100,0%
Number of issues	17,6%	100,0%
Market capitalization at the end of the year	71,0%	100,0%
Average capitalization	100,0%	28,1%
Turnover ratio	79,6%	100,0%
	305,4%	428,1%
	71,3%	100,0%

Table 5: Analysis of 2014: Population consideration

As can be seen in Table 5, consideration of population made the biggest difference. Without considering the size of the country, PSE had 50,1% of the value that WSE had, now it is 71,3%. However Prague Stock Exchange is still less competitive, but if WSE as considered as a leader in CEE region, the difference is not so big as it should be.

4.3.3 Conclusion

These two market have many similarities but are different. WSE has almost 10 times bigger total trade value than PSE, but it is starting to stagnate. WSE is still attracting new listing however their quality is decreasing as was showed in average capitalization. In addition PSE has much better average capitalization, however its turnover ratio is lower, which shows missing liquidity in this market. Even though WSE is considered as a leader of CEE region, in recent year sign of stagnation can be seen and management will have difficult time to deal with this problem. After consideration of size of the country PSE does not look so incompetent after all, however a decrease in all relevant factors can be seen in recent years, which suggest that without any revolution, the market will be even smaller and less competitive.

5 Discussion

The aim of this study is to find out advantages and disadvantages of possible merger between Prague Stock Exchange and Warsaw Stock Exchange and to answer questions if they should merge. This study already compared these two stock exchanges and in this section study will discuss what has been analysed and answer question about consolidation with help from opinions from interview with competent analysts from leading financial institutions. Whole interview can be seen in Appendix D. Members of panel of experts for this study are:

- Jaroslav Brychta: Main analyst of X-Trade Brokers Czech Republic, broker company founded in Poland
- Dusan Jalovy: Stock Market Analyst of UniCredit Bank from Czech Republic, which is part of Italian global banking and financial services company

5.1 Importance of CEE market

As was already mentioned in this study, CEE region is small and as was shown in comparison of turnover ratio, even the total turnover is small with comparison to its market capitalization. Both experts are agreeing that CEE region is insignificant in comparison with the world market. It is on the bridge between emerging and developed markets. It is unimportant for developed markets because of liquidity and size as was also mentioned in our analysis of PSE and WSE. And for emerging markets there are more interesting and bigger markets. Also one experts support analysis of this study that the markets in CEE region were more significant before global financial crisis. CEE region is a market without any international overlap, one exception is WSE, which has a chance to be leader in this region and be the one market that international investors will choose if they want to invest in this region. One of the experts mentioned that fall in importance was also caused by nationalization of pension funds in Hungary and partly in Poland.

5.2 Difference between PSE and WSE

As was mentioned in the comparison, it may not be fair to compare these two market as there are, because Poland economy is far bigger, with even bigger population. However even when study considered the size of the economy, PSE seems to be less developed market which has not recovered since global financial crisis. As experts say, Poland, WSE has more developed financial market, companies are privatized by stock exchange and private companies are using WSE as a financial source, so they do not have to take loans or search for potential buyers to

buy part of their company, but they make initial public offer through WSE. In Czech Republic, according to one expert, companies are using PSE as “exit”, when owners want to make an exit from the company, they start by selling part of it on a stock market. One of the main function of stock exchange is access to “fresh money” for investments for a growth of the company, both experts are agreeing that this is used in Poland but not in Czech Republic.

5.2.1 PSE

Both experts are agreeing that the main disadvantage of PSE is the small size of the country it is in and also the approach of Czech government which does not use the PSE to sell publicly owned companies. For example part of Czech Airlines was sold to Korean Air in private. Corruption in politics is also mentioned as a problem of PSE. In addition to size of the economy, number of companies which are big enough for public listing is low and Czech market has to wait for them. And it is a shame that Czech IT company AVG which does antivirus software is listed on Nasdaq in USA and another antivirus company AVAST also will not be listed on PSE. Besides political problems and size of the economy, the attractiveness of PSE is low, the management does not do enough for presentation and explanation of advantages of public listing. Companies are not motivated to access new capital by IPO.

5.2.2 WSE

Poland seems to be on a right path, however it is starting to stagnating as was showed in analysis and its liquidity is decreasing.

Success of WSE is according to chosen experts due to approach of politicians, different form of privatization and size of the economy. Poland is simply much bigger country, many publicly owned and partly publicly owned companies were privatized by WSE, this helped to build relatively strong financial market which is because of the size of Poland economy able to work and grow.

5.3 Effects of merger

In the literature review was mentioned that the international trend is consolidation, because stock exchanges are becoming for-profit organization and their aim is to increase profit and cut costs. In addition innovation and effectiveness is important because as Ramos (2003, p. 13) adds “The ultimate goal in the “race” for cooperation is survival, since destructive competition is avoided. Merger and other forms of integration seem to be a solution for

members to maintain their presence in the market.” This quote is a good summarization about why mergers happen, however experts of this study seem to not look at it that way. Both experts agree that merger would theoretically increase liquidity, however one expert adds that the merger would not have many positives, the liquidity increase would be only for bigger companies, which support our findings from literature review where we analysed effects of mergers of stock markets from around the world. Only decrease in costs is seeing by this expert as an advantage of possible merger.

The more important part whether the merger would have positives depends on the strategy. As was mentioned in the interview “half dead” Czech stock market will be difficult to make to move again, it will not be easy and the merger only is not the solution.

As was mentioned in literature review, one of the advantages of merger is opportunity to reorganize the whole structure and to make it more effective, this seems to be agreed by these experts. The consolidation only of PSE and WSE is not the solution without new strategy. In the literature review was mentioned that one of the possible advantages of consolidation are economies of scale. However one expert does not see this as added value and second one thinks it would be the case, but it is not decisive factor.

5.3.1 PSE without merger

In the individual analyses was shown that since global financial crisis, every important competitive factor of this market is decreasing. PSE needs radical change in its strategy and merger could be one start, however it is not the only one. One expert does not believe that the PSE is capable to become one of the most important markets in CEE region, he sees WSE as a clear leader and does not see any possibility that the share of PSE could be bigger than share of the Czech economy in the region.

Second expert sees hidden potential of PSE, he mentioned that the stock market is only so attractive, as attractive is the country and companies in it. Czech Republic is stagnating, however if new companies will be founded, he is not worried about PSE. He also mentions few companies that could be listed on PSE as is Alza (biggest eshop in Czech Republic), Seznam (Competitor of Google in Czech Republic), Lesy CR, Budvar and Czech Post (All state owned companies).

5.3.2 WSE with merger

As was discussed in individual analyses this market is doing well, it has the biggest market capitalisation from CEE region, however this becomes also its disadvantages, because as was

shown its market capitalization is increasing, however when the focus is on liquidity, there can be seen a problem, because WSE is trying to increase market capitalization and number of issues too hard and does not look for quality, but quantity. This trend can be seen in its turnover ratio. However one expert adds that WSE could benefit from international overlap and if the WSE could help to Prague Stock Exchange to become more attractive financial market, it would gain access to big share on this market, which could offer potential grow.

5.3.3 Merger?

When this study asked simple question to Czech experts about whether these two stock exchanges should merge, first analyst said that it depends on price and second analyst said NO. Further on this question will be discussed in recommendation.

5.4 Recommendation

In literature review was researched that liquidity of the market helps to national economy in the long run (Ake, 2010). This helped to focus on the liquidity of chosen markets to answer a question whether PSE should merge with WSE.

In addition “the ultimate goal in the “race” for cooperation is survival” (Ramos, 2003, p. 13) and “more efficient allocation of resources rather than more capital accumulation is the primary channel through which a stock exchange affects output growth,” (Baier, Dwyer and Tamura, 2004, p. 22).

To put it shortly it is clear that countries need an access to liquid markets, markets need to stop to focus on capital accumulation, but start to focus on efficient allocation of resources and their focus on increasing effectivity can start with cooperation, or possibly even consolidation, but not necessary.

But the merger is not a tool to increase effectivity, it can help, it can be the start but not the end. Main problem that the PSE should focus on is increase of liquidity, increase of effectiveness of their resources, one of the advantages of consolidation is the opportunity to restructualization, but it is opportunity, not the outcome. PSE needs to change its strategy, to become more effective and merger with WSE is one of the variants to do that, but not the only one.

WSE also needs to stop focus on increasing market capitalization, on the quantity, but start to think about the quality, because its liquidity is starting to decrease as well as in case of PSE.

6 Conclusion

The aim of this study was to compare Prague Stock Exchange and Warsaw Stock Exchange and analyse whether they should merge.

Literature review researched that consolidation of stock exchanges is a worldwide trend, in the USA was stock exchange in every big city, in present we can see only few big markets as is New York Stock Exchange or Nasdaq. Even in Europe merger is a trend with done merger of Euronext or acquired Italian Stock Exchange by London Stock Exchange.

The main reason for consolidation is an increase in effectiveness and competitiveness and mainly to survive in increasing competition. Stock exchanges needs to increase their effectivity because most of them are for-profit organisation and as every for-profit, they are watching their costs and incomes. Increase in effectivity is also in best interest of countries where the market is because liquid market helps the economy in the long run. Which bring this study to focus on liquidity.

In the comparison, this study found out that PSE is not able to recover from global financial crisis, its liquidity is decreasing. Their number of issues is decreasing since its start in 1993. In case of WSE, this market it is doing well, it is market with the highest market capitalization in CEE region, however their liquidity is also decreasing and acquiring of even less liquid PSE does not look like the best solution, but possibly this change could help to these markets to do a big revolution in their strategy.

This study recommends that Prague Stock Exchange should focus on its strategy to become more effective and liquid and yes, merger with Warsaw Stock Exchange could be a good start, but this is not the solution because merger without restructualization and change in strategy would be useless.

Also it is important to not forget that Prague Stock Exchange is already part of group of exchanges, leading by Vienna Stock Exchange. This was a first step and now there is a need to use this connection and further integrate their systems to cut costs and to be more efficient, because as was often mentioned, survival against competition is the aim of further integration of markets.

Bibliography

- Ake, B. (2010). The role of stock market development in economic growth: evidence from some Euronext countries. *International Journal of Financial Research*, 1(1), 14-20. ISO 690
- Arnold, G. (2012). *The financial times guide to the financial markets*. Harlow: Pearson.
- Arnold, T., Hersch, P., Mulherin, J. H., & Netter, J. (1999). Merging markets. *The Journal of Finance*, 54(3), 1083-1107. doi:10.1111/0022-1082.00137
- Baier, S. L., Dwyer Jr, G. P., & Tamura, R. (2004). Does opening a stock exchange increase economic growth?. *Journal of International Money and Finance*, 23(3), 311-331.
- Becket, M. (2014). *How the stock market works: A beginner's guide to investment*. GB: Kogan Page Ltd.
- Bloomberg. (2015). *ENX:FP*. Retrieved from <http://www.bloomberg.com/quote/ENX:FP>.
- Blumberg, B., Cooper, D. R., & Schindler, P. S. (2011). *Business research methods*. London: McGraw-Hill Higher Education.
- Brown, L. (2013). Rise of the IntercontinentalExchange and Implications of its Merger with NYSE Euronext. *JL & Com.(U. Pitt.)*(Fall 2013). ISO 690
- Bryman, A., & Bell, E. (2011). *Business research methods*. Oxford: Oxford University Press.
- Cameron, S., & Price, D. (2009). *Business research methods: A practical approach*. London: Chartered Institute of Personnel and Development.
- CIA. (2014a). *The World Factbook: COUNTRY COMPARISON: POPULATION*. Retrieved from <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2119rank.html?countryname=Czech%20Republic&countrycode=cz&ionCode=eur&rank=83#ez>.
- CIA. (2014b). *GDP (PURCHASING POWER PARITY)*. Retrieved from <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2001rank.html>.
- Ciensi, J. (2011, April 19). Polish bourse pursues foreign groups as it vies to lead central Europe. *The Financial Times*. Retrieved from <http://www.ft.com/intl/cms/s/0/314d8834-68a2-11e0-81c3-00144feab49a.html?siteedition=uk#axzz3VstkyLh>
- Ciensi, J. (2013, May 9). Stock exchanges: Sound of overtures in Warsaw and Vienna. *The Financial Times*. Retrieved from <http://www.ft.com/cms/s/0/a80d3bb4-ae7c-11e2-bdfd-00144feabdc0.html#axzz3VstkyLh>

- Credit Suisse. (2014). *Emerging Capital Markets: The Road to 2030*. Retrieved from <http://www.slideshare.net/creditsuisse/emerging-capitalmarketstheroadto2030>.
- Czerwiński, A. (2014). *Warsaw Stock Exchange - History, Structure And Current Strategy*. Retrieved from <http://www.warsawstockjournal.com/warsaw/all-about-warsaw-stock-exchange/warsaw-stock-exchange-history-structure-strategy>.
- deB Harris, F. H., McInish, T. H., Shoesmith, G. L., & Wood, R. A. (1995). Cointegration, error correction, and price discovery on informationally linked security markets. *Journal of financial and quantitative analysis*, 30(04), 563-579. ISO 690
- Di Noia, C. (2000). Customer controlled firms: The case of stock exchanges. ISO 690
- Di Noia, C. (2001). Competition and integration among stock exchanges in Europe: network effects, implicit mergers and remote access. *European Financial Management*, 7(1), 39-72.
- Doede, R. W. (1967). The monopoly power of the New York stock exchange (Doctoral dissertation, University of Chicago, Department of Economics). ISO 690
- Economides, N. (1993). Network economics with application to finance. *Financial markets, institutions & instruments*, 2(5), 89-97.
- El Serafie, H., & Abdel Shahid, S. H. (2002). World stock exchanges are integrating/consolidating/merging: What could be done by Arab exchanges. *Cairo & Alexandria Exchanges, Working Papers*, (2). ISO 690
- Ferrarini, G. (Ed.). (1998). *European Securities Markets: the investment services directive and beyond*. Kluwer Law International.
- Hasan, I., & Malkamäki, M. (2001). Are expansions cost effective for stock exchanges? A global perspective. *Journal of banking & finance*, 25(12), 2339-2366.
- Intercontinental Exchange. (2014). *Euronext IPO priced at €20 per Share*. Retrieved from http://otp.investis.com/clients/us/intercontinental_exchange_group/usn/usnews-story.aspx?cid=953&newsid=19505.
- Kang, J., & Stulz, R. (1997). Why is there a home bias? an analysis of foreign portfolio equity ownership in japan. *Journal of Financial Economics*, 46(1), 3-28. doi:10.1016/S0304-405X(97)00023-8
- Levine, R. E. (1998). Stock markets, banks, and economic growth. *The American Economic Review*, 88(3), 537-558.
- Martinuzzi, E. (2007, June 23). LSE Agrees to Buy Borsa Italiana for EU1.63 Billion. *Bloomberg*. Retrieved from <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a10VSl6dsHkw>
- McAndrews, J., & Stefanadis, C. (2002). The consolidation of European stock exchanges. *Current issues in Economics and Finance*, 8(6).

Merton, R. C. (1987). A simple model of capital market equilibrium with incomplete information. *The journal of finance*, 42(3), 483-510. ISO 690

Minier, J. (2009). *Journal of development economics: Opening a stock exchange* Elsevier.
doi:10.1016/j.jdeveco.2008.10.002

Moore, L. (2006). *The effect of World War One on stock market integration*. Mimeo.

Nielsson, U. (2009). Stock exchange merger and liquidity: The case of euronext. *Journal of Financial Markets*, 12(2), 229-267. doi:10.1016/j.finmar.2008.07.002

Nowbutsing, B. M., & Naregadu, S. (2009). Returns, Trading Volume and Volatility in The Stock Market of Mauritius. *African Journal of Accounting, Economics, Finance and Banking Research*, 5(5), 1-36. ISO 690

Portes, R., & Rey, H. (2005). The determinants of cross-border equity flows. *Journal of international Economics*, 65(2), 269-296. ISO 690

Postelnicu, A., Wells, D., Wighton, D., & Politi, J. (2005, April 21). NYSE to merge with electronic exchange. *The Financial Times*. Retrieved from <http://www.ft.com/cms/s/0/3a231896-b1d0-11d9-8c61-00000e2511c8.html#axzz3RjjU7KQg>

Prague Stock Exchange (n.d). Retrieved from: <http://www.pse.cz/Statistika/Burzovni-Indexy/Detail.aspx?bi=1>

Prague Stock Exchange. (2013). *Learn about the history of Prague Stock Exchange*. Retrieved from <http://20years.pse.cz/>.

Prague Stock Exchange. (2015). *STATISTICAL DATA IN FOREIGN CURRENCIES*. Retrieved from http://ftp.pse.cz/Info.bas/Eng/Yearly_data_in_EUR_and_USD.pdf.

Prague Stock Exchange. (2015b). *PX Index*. Retrieved from <http://www.pse.cz/Statistika/Burzovni-Indexy/Detail.aspx?bi=1>.

Prague Stock Exchange. (2015c). *Basic profile of PX - Prague Stock Exchange*. Retrieved from http://ftp.pse.cz/Info.bas/Eng/en_PX.pdf.

Prague Stock Exchange. (2015d). *Basic profile of PX-GLOB - Prague Stock Exchange*. Retrieved from http://ftp.pse.cz/Info.bas/Eng/en_PX-GLOB.pdf.

Prague Stock Exchange. (2015e). *PX-GLOB Index*. Retrieved from <http://www.pse.cz/Statistika/Burzovni-Indexy/Detail.aspx?bi=3>.

Ramos, S. B. (2003). Competition between stock exchanges: A survey. *FAME Research paper*, (77).

Redhead, K. (2003). *Introducing investments: A personal finance approach*. Harlow: Financial Times Prentice Hall.

Rousseau, P. L., & Sylla, R. (2003). Financial systems, economic growth, and globalization. In *Globalization in historical perspective* (pp. 373-416). University of Chicago Press.

Rutterford, J., & Davison, M. (2007). An introduction to stock exchange investment. Basingstoke: Palgrave Macmillan.

Saunders, M., Lewis, P., & Thornhill, A. (2003). Research methods for business students. Harlow: Financial Times Prentice Hall.

Saunders, M., Lewis, P., & Thornhill, A. (2012). Research methods for business students. Harlow: Pearson. ISBN 1283540568

Smullen, J., & Law, J. (2008). A dictionary of finance and banking Oxford University Press.

Steil, B. (1996). *The European equity markets: The state of the union and an agenda for the millennium*. Brookings Inst Pr.

Steil, B. (2001). Creating securities markets in developing countries: A new approach for the age of automated trading. *International Finance*, 4(2), 257-278.

Stoog.com. (2015). *PX vs. WIG20*. Retrieved from <http://stoog.com/q/?s=^px&d=20150401&c=mx&t=l&a=lg&b=0&r=wig20>.

The CEE Stock Exchange Group. (2015a). The Year 2014 at the CEE Stock Exchange Group. Retrieved from <http://www.ceeseg.com/static/cms/sites/ceeseg/en/media/pdf/factsheet/the-year-2014-at-the-cee-stock-exchange-group.pdf>.

The CEE Stock Exchange Group. (2015b). Key Figures January 2015. Retrieved from <http://www.ceeseg.com/static/cms/sites/ceeseg/en/media/pdf/facts-figures.pdf>.

The Oxford Compact Dictionary and Thesaurus (1997). Oxford; Oxford University Press; ISBN: 9780199571123

The Prague Stock Exchange. (2015a). PSE Trading Data. Retrieved from <http://ftp.pse.cz/Statist.dta/Year/>.

The World Bank. (2015). Stocks traded, turnover ratio (%). Retrieved from <http://data.worldbank.org/indicator/CM.MKT.TRNR/>.

The World Bank. (2015a). *GDP (current US\$)*. Retrieved from <http://data.worldbank.org/indicator/NY.GDP.MKTP.CD>.

The World Bank. (2015b). *GDP per capita (current US\$)*. Retrieved from <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD>.

The World Federation of Exchanges. (2012). *Cost and Revenue Survey*. Retrieved from <http://www.world-exchanges.org/>.

Warsaw Stock Exchange. (2015). *WSE MAIN STATISTICS*. Retrieved from http://www.gpw.pl/analizy_i_statystyki_pelna_wersja_en.

Warsaw Stock Exchange. (2015a). *FACT BOOK 2014*. Retrieved from http://www.gpw.pl/fact_books.

Warsaw Stock Exchange. (2015b). *Warsaw Stock Exchange Indices*. Retrieved from http://www.gpw.pl/plik?ph_content_start=getFile&fwmf_id=3815.

Warsaw Stock Exchange. (2015c). *WIG20*. Retrieved from http://www.gpw.pl/indeksy_gieldowe_en?isin=PL9999999987&ph_tresc_glowna_start=show.

Warsaw Stock Exchange. (2015d). *WIG*. Retrieved from http://www.gpw.pl/indeksy_gieldowe_en?isin=PL9999999995&ph_tresc_glowna_start=show#chart.

Werner, I. M., & Tesar, L. L. (1997). The internationalization of securities markets since the 1987 crash (No. 97-55). Wharton School Center for Financial Institutions, University of Pennsylvania.

World Federation of Exchanges. (2015). What we do. Retrieved from <http://www.world-exchanges.org/about-wfe/what-we-do>.

List of Abbreviations

CEE Central and Eastern Europe

CZK Czech Koruna

EU European Union

GDP Gross Domestic Product

IPO Initial Public Offer

Nasdaq National Association of Securities Dealers Automated Quotations

NYSE New York Stock Exchange

PLN Polish Zloty

PSE Prague Stock Exchange

USA United States of America

USD United States Dollar

WFE World Federation of Exchanges

WSE Warsaw Stock Exchange

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List of Annexes

Appendix A: Analysis of Prague Stock Exchange

Appendix B: analysis of Warsaw Stock Exchange

Appendix C: Comparison of PSE and WSE

Appendix D: Interview with Czech experts

Annexes

Appendix A: Analysis of Prague Stock Exchange

	Total trade value (CZKbn)	Total Market Capitalization in CZKbn (Dec. 31)	Change in market capitalization	Turnover ratio	Number of Issues (Dec. 31)	Change in number of issues	Cap/Num
1994	42,59	353,10		12%	1028		0,343482
1995	125,64	478,63	36%	26%	1716	67%	0,278922
1996	249,94	539,24	13%	46%	1670	-3%	0,322898
1997	246,30	495,68	-8%	50%	320	-81%	1,549
1998	172,59	416,20	-16%	41%	304	-5%	1,369079
1999	163,46	479,65	15%	34%	195	-36%	2,459744
2000	264,15	442,89	-8%	60%	151	-23%	2,933046
2001	128,8	340,25	-23%	38%	102	-32%	3,335784
2002	197,4	478,04	40%	41%	79	-23%	6,051139
2003	257,44	644,48	35%	40%	65	-18%	9,915077
2004	479,66	975,77	51%	49%	55	-15%	17,74127
2005	1041,17	1330,81	36%	78%	39	-29%	34,12333
2006	848,9	1592	20%	53%	32	-18%	49,75
2007	1013,02	1841,68	16%	55%	32	0%	57,5525
2008	852,04	1091,73	-41%	78%	28	-13%	38,99036
2009	463,86	1293,48	18%	36%	25	-11%	51,7392
2010	389,87	1388	7%	28%	27	8%	51,40741
2011	370,99	1060,77	-24%	35%	26	-4%	40,79885
2012	250,58	1142,09	8%	22%	28	8%	40,78893
2013	174,74	1093,48	-4%	16%	26	-7%	42,05692
2014	153,49	1 040,29	-5%	15%	23	-12%	45,23

Main figures for calculation retrieved from The Prague Stock Exchange. (2015). PSE Trading Data. Retrieved from <http://ftp.pse.cz/Statist.dta/Year/>.

Turnover ratio

Turnover ratio	PSE (Shares)	Czech Republic	EU	Poland	World
2005	78%	119%	125%	36%	117%
2006	53%	76%	130%	45%	140%
2007	55%	69%	184%	48%	168%
2008	78%	70%	163%	46%	218%
2009	36%	41%	111%	50%	198%
2010	28%	30%	92%	48%	128%
2011	35%	38%	103%	58%	132%
2012	22%	27%	81%	43%	100%

The World Bank. (2015). Stocks traded, turnover ratio (%). Retrieved from <http://data.worldbank.org/indicator/CM.MKT.TRNR/>.

Individual shares of PSE

Issuer	Market Capitalization (CZKm)	Percentage	Comulative percentage	Annual trade Turnover	Turnover ratio
ČEZ	317 951,90	30,56%	30,56%	60 395,27	19,00%
ERSTE GROUP BANK	227 794,00	21,90%	52,46%	27 619,60	12,12%
KOMERČNÍ BANKA	180 166,70	17,32%	69,78%	40 394,27	22,42%
VIG	132 096,00	12,70%	82,48%	1 518,04	1,15%
O2 C.R.	73 546,00	7,07%	89,55%	15 489,48	21,06%
UNIPETROL	23 664,20	2,27%	91,82%	402,529	1,70%
PHILIP MORRIS ČR	20 706,20	1,99%	93,81%	2 458,01	11,87%
STOCK	15 940,00	1,53%	95,35%	166,315	1,04%
CETV	9 290,80	0,89%	96,24%	1 874,78	20,18%
VGP	7 433,20	0,71%	96,95%	0,019	0,00%
Fortuna	6 263,40	0,60%	97,55%	786,888	12,56%
PEGAS NONWOVENS	5 906,80	0,57%	98,12%	1 217,89	20,62%
TMR	3 957,20	0,38%	98,50%	9,192	0,23%
ENERGOCHEMICA	3 810,00	0,37%	98,87%	0	0,00%
NWR	2 796,90	0,27%	99,14%	746,154	26,68%
PLG	2 039,50	0,20%	99,33%	160,177	7,85%
ENERGOAQUA	1 752,50	0,17%	99,50%	0,12	0,01%
PRAŽSKÉ SLUŽBY	1 710,20	0,16%	99,67%	1,811	0,11%
TOMA	1 214,30	0,12%	99,78%	1,065	0,09%
BOREALIS	900	0,09%	99,87%	0	0,00%
RMS MEZZANINE	830,8	0,08%	99,95%	0,359	0,04%
JÁCHYMOV PM	343,3	0,03%	99,98%	0,496	0,14%
E4U	174,8	0,02%	100,00%	21,971	12,57%

Main figures for calculation retrieved from The Prague Stock Exchange. (2015). PSE Trading Data. Retrieved from <http://ftp.pse.cz/Statist.dta/Year/>.

Appendix B: analysis of Warsaw Stock Exchange

	Total turnover value (PLN mil.)	Change in total turnover	Market capitalisation of domestic companies (PLN mil.)	Market cap. of for. Com. (PLN mil.)	Market capitalisation (PLN mil.)	Change in market capitalisation	Turnover ratio	Number of issues	Change in number of issues	Cap / Num
1991	15		161		161		9%	9		17,88889
1992	114	660 %	351		351	118%	32%	16	78%	21,9375
1993	3937	335 4%	5845		5845	1565%	67%	22	38%	265,6818
1994	11710	197 %	7450		7450	27%	157%	44	100%	169,3182
1995	6836	- 42%	11271		11271	51%	61%	65	48%	173,4
1996	14948	119 %	24000		24000	113%	62%	83	28%	289,1566
1997	26171	75%	43766		43766	82%	60%	143	72%	306,0559
1998	31191	19%	72442		72442	66%	43%	198	38%	365,8687
1999	44672	43%	123411		123411	70%	36%	221	12%	558,4208
2000	84637	89%	130085		130085	5%	65%	225	2%	578,1556
2001	40300	- 52%	103370		103370	-21%	39%	230	2%	449,4348
2002	31834	- 21%	110565		110565	7%	29%	216	-6%	511,875
2003	40118	26%	140001	27715	167716	52%	24%	203	-6%	689,6601
2004	59759	49%	214313	77385	291698	74%	20%	230	13%	931,7957
2005	98517	65%	308418	116482	424900	46%	23%	255	11%	1209,482
2006	169348	72%	437719	198190	635909	50%	27%	284	11%	1541,264
2007	239740	42%	509887	570370	108025 7	70%	22%	351	24%	1452,67
2008	165958	- 31%	267359	197756	465115	-57%	36%	374	7%	714,8636
2009	175943	6%	421178	294643	715821	54%	25%	400	7%	1052,945
2010	234288	33%	542646	253836	796482	11%	29%	426	7%	1273,817
2011	268139	14%	446151	196712	642863	-19%	42%	438	3%	1018,61
2012	202880	- 24%	523390	210657	734047	14%	28%	450	3%	1163,089
2013	256147	26%	593464	247316	840780	15%	30%	471	5%	1260,008
2014	232864	-9%	591165	661793	125295 8	49%	19%	472	0%	1252,468

Main figures retrieved from Warsaw Stock Exchange. (2015). WSE MAIN STATISTICS. Retrieved from http://www.gpw.pl/analizy_i_statystyki_pelna_wersja_en.

Turnover ratio

Turnover ratio	Prague Stock Exchange (Shares)	Czech Republic	EU	Poland	World	Warsaw Stock Exchange (Shares)
2005	78%	119%	125%	36%	117%	55%
2006	53%	76%	130%	45%	140%	43%
2007	55%	69%	184%	48%	168%	20%
2008	78%	70%	163%	46%	218%	34%
2009	36%	41%	111%	50%	198%	25%
2010	28%	30%	92%	48%	128%	27%
2011	35%	38%	103%	58%	132%	35%
2012	22%	27%	81%	43%	100%	26%

The World Bank. (2015). Stocks traded, turnover ratio (%). Retrieved from <http://data.worldbank.org/indicator/CM.MKT.TRNR/>.

Every 10th company

	Market capitalization (PLN mil)	Annual turnover	Turnover ratio
FOTA	23,28	7,72	302%
PCGUARD	142,61	66,29	215%
NOKAUT	16,03	12,03	133%
MONNARI	231,76	203,24	114%
ARCUS	13,77	16,34	84%
MOSTALWAR	64,35	89,8	72%
RELPOL	50,02	80,72	62%
06MAGNA	14,83	27,84	53%
ATLANTIS	16,28	34,02	48%
TAURONPE	3103,56	7658,64	41%
IMPEXMET	258,05	684	38%
STAPORKOW	45,11	132,86	34%
POZBUD	41,66	132,8	31%
ERG	5,22	18,19	29%
ABMSOLID	1,51	5,55	27%
EMPERIA	281,69	1134,24	25%
SKYLINE	3,28	14,4	23%
ATM	100,52	457,93	22%
KREC	23,15	110,47	21%
GRUPAAZOTY	1224,58	6199,72	20%
ABCDATA	98,19	538,58	18%
PELION	191,54	1175,7	16%
TRANSPOL	6,71	44,66	15%
MIESZKO	23,7	168,37	14%

COMARCH	103,47	781,01	13%
IZOSTAL	25,47	207,6	12%
HANDLOWY	1607,84	13719,26	12%
VOXEL	18,71	171,19	11%
IPOPEMA	23,16	229,92	10%
INTAKUS	1,57	16,26	10%
TIM	10,49	114,33	9%
OVOSTAR	50,95	600	8%
UNIBEP	21,15	275,36	8%
LIBET	10,22	151	7%
SUWARY	4,54	72,92	6%
PTI	13,42	261	5%
FON	4,06	90,72	4%
MCLOGIC	2,86	75,85	4%
PGODLEW	14,62	491,13	3%
NFIEMF	35,05	1775,36	2%
NOVAKBM	3,68	229,4	2%
KRKA	91,04	8844,13	1%
UNICREDIT	486,5	130311,76	0%
MEGARON	0,09	56,62	0%

Main figures for calculation retrieved from Warsaw Stock Exchange. (2015). WSE MAIN STATISTICS.
Retrieved from http://www.gpw.pl/analizy_i_statystyki_pelna_wersja_en

Appendix C: Comparison of PSE and WSE

	Yearly Trade Values (in mil. EUR)		Market capitalization at the end of the year (in mil.)		Market capitalization per 100 000 citizens		Number of issues		Cap / Num		Turnover ratio	
	PSE	WSE	PSE	WSE	PSE	WSE	PSE	WSE	PSE	WSE	PSE	WSE
					10627448	38346279						
1993	212,7	¹ 647,3										
1994	¹ 252,7	³ 942,8	¹⁰ 333,7	² 508,4	97,2	6,5	1028	44	10,1	57,0	12,1%	157,2%
1995	³ 671,3	² 163,3	¹⁴ 053,5	³ 566,8	132,2	9,3	1716	65	8,2	54,9	26,3%	60,7%
1996	⁷ 348,9	⁴ 187,1	¹⁵ 903,1	⁶ 722,7	149,6	17,5	1670	83	9,5	81,0	46,3%	62,3%
1997	⁶ 961,2	⁶ 727,8	¹² 968,5	¹¹ 250,9	122,0	29,3	320	143	40,5	78,7	49,7%	59,8%
1998	⁴ 789,6	⁷ 626,2	¹¹ 884,4	¹⁷ 712,0	111,8	46,2	304	198	39,1	89,5	41,5%	43,1%
1999	⁴ 425,9	¹⁰ 712,7	¹³ 275,7	²⁹ 595,0	124,9	77,2	195	221	68,1	133,9	34,1%	36,2%
2000	⁷ 390,0	²¹ 983,6	¹² 621,7	³³ 788,3	118,8	88,1	151	225	83,6	150,2	59,6%	65,1%
2001	³ 780,7	¹¹ 448,9	¹⁰ 639,5	²⁹ 366,5	100,1	76,6	102	230	104,3	127,7	37,9%	39,0%
2002	⁶ 413,8	⁷ 918,9	¹⁵ 127,8	²⁷ 503,7	142,3	71,7	79	216	191,5	127,3	41,3%	28,8%
2003	⁸ 068,6	⁸ 499,6	¹⁹ 888,4	³⁵ 533,1	187,1	92,7	65	203	306,0	175,0	39,9%	23,9%
2004	¹⁵ 038,3	¹⁴ 646,8	³² 097,8	⁷¹ 494,6	302,0	186,4	55	230	583,6	310,8	49,2%	20,5%
2005	³⁴ 957,6	²⁵ 522,5	⁴⁵ 882,2	¹¹⁰ 077,7	431,7	287,1	39	255	¹ 176,5	431,7	78,2%	23,2%
2006	²⁹ 946,5	⁴⁴ 216,2	⁵⁷ 901,3	¹⁶⁶ 033,7	544,8	433,0	32	284	¹ 809,4	584,6	53,3%	26,6%
2007	³⁶ 528,2	⁶⁶ 410,0	⁶⁹ 288,3	²⁹⁹ 240,2	652,0	780,4	32	351	² 165,3	852,5	55,0%	22,2%
2008	³⁴ 223,0	³⁹ 798,1	⁴⁰ 996,3	¹¹¹ 538,4	385,8	290,9	28	374	¹ 464,2	298,2	78,0%	35,7%
2009	¹⁷ 572,3	⁴² 808,5	⁴⁸ 995,5	¹⁷⁴ 165,7	461,0	454,2	25	400	¹ 959,8	435,4	35,9%	24,6%
2010	¹⁵ 391,1	⁵⁹ 163,6	⁵⁵ 025,0	²⁰¹ 131,8	517,8	524,5	27	426	² 038,0	472,1	28,1%	29,4%
2011	¹⁵ 130,3	⁶⁰ 664,9	⁴¹ 115,0	¹⁴⁵ 444,1	386,9	379,3	26	438	¹ 581,3	332,1	35,0%	41,7%
2012	⁹ 967,7	⁴⁹ 847,7	⁴⁵ 429,2	¹⁸⁰ 355,5	427,5	470,3	28	450	¹ 622,5	400,8	21,9%	27,6%
2013	⁶ 735,2	⁶¹ 722,2	³⁹ 842,7	²⁰² 597,6	374,9	528,3	26	471	¹ 532,4	430,1	16,0%	30,5%
2014	⁵ 575,7	⁵⁴ 028,8	³⁷ 514,9	²⁹⁰ 709,5	353,0	758,1	23	472	¹ 631,1	615,9	14,8%	18,6%

Main figures for calculation retrieved from Prague Stock Exchange. (2015). *STATISTICAL DATA IN FOREIGN CURRENCIES*.

Retrieved from http://ftp.pse.cz/Info/bas/Eng/Yearly_data_in_EUR_and_USD.pdf.

And Warsaw Stock Exchange. (2015). *WSE MAIN STATISTICS*. Retrieved from

http://www.gpw.pl/analizy_i_statystyki_pelna_wersja_en

Appendix D: Interview with Czech experts

Jaroslav Brychta (JB) and Dusan Jalovy (DJ)

Interview answers were in Czech language, translation can be seen after the original.

1. As an expert on international capital markets, how big is the importance of stock exchanges from CEE region for an international economy and importance of PSE in CEE region.
 - JB: Akciový trh ve většině CEE zemí je jen trhem, na kterém se obchoduje pár větších domácích firem bez jakéhokoli mezinárodního přesahu. Jedinou výjimkou je Polsko, které má šanci stát se v tomto regionu lídrem, ke kterému se budou investoři obracet v případě, že budou chtít mít určitou expozici vůči CEE.
 - JB: Stock market in most of the CEE region is a market where few big domestic companies are traded without any international overlap. One exception is Poland, which has chance to become leader in this region, to which investors will come in case when they will want to have certain exposition in CEE region.
 - DJ: Obecně se dá říci, že trh CEE burz je velmi zanedbatelný, stojí na pomezí emerging markets a developed markets. Pro Developed je CEE nepodstatný kvůli velikosti a likviditě. Pro EM jsou daleko zajímavější a větší trhy. Před krizí byl lokální význam silnější než dnes. Bohužel po tom co doslo ke “znarodnění” financí v penzijních fondech v Maďarsku a částečně v Polsku jejich postavení nadále kleslo, přesto jsou důležitým prostředkem v systému finančních trhů.
 - DJ: Generally can be said that CEE market is very unimportant, it stays on the bridge between emerging market and developed markets. For developed markets it is unimportant because of its size and liquidity. For emerging markets there are more interesting and bigger markets. Before crisis was local importance stronger than today. Unfortunately after “nationalization” of capital in pension funds in Hungary and partly in Poland, their position is lower, even though there are still important part of financial system.
2. How big influence has Prague Stock Market on economy of Czech Republic and Warsaw Stock Exchange on Polish economy? Do you see any difference of their effectiveness?
 - JB: Neřekl bych, že je vliv nějak konkrétně měřitelný. Existence rozvinutého akciového trhu v Polsku ale dává polským firmám výhodu dodatečného zdroje financování. Mohou získat kapitál nejen skrze úvěry a neveřejný prodej podílu na

společnosti, ale i prostřednictvím regulérního IPO, což může být v řadě případů, zejména pak u populárních domácích společností, velkou výhodou.

- JB: I would not say that the influence is measurable. Existence of developed stock market in Poland offers certain advantage of additional funding for Polish companies. They can get access to capital not only by loans and private sale of shares in the company, but even through IPO, which can be big advantage in many cases, especially for popular domestic companies.
- DJ: Urcite existuje rozdíl. Polsko je mnohem více rozvinutý trh v tom, že firmy se privatizují přes burzu stejně tak si soukromé firmy chodí na burzu pro peníze. V ČR se na burzu chodí pouze pro rekne v nadsazce EXIT. Kdy majitele chtějí exitovat a začnou tím že část prodají na burze. Moc radostných příběhů v Praze není. Za povedený se dá považovat PEGAS. Jedna z hlavních funkcí je chodit si pro fresh money. To se v Polsku děje u nás nikoliv.
- DJ: There is definitely difference. Poland is more developed market in that, that companies are privatized through stock exchange and also private companies are using stock market to gain access to new capital. In Czech Republic stock exchange is used only for “exit.” When owners want to leave the company and they start by selling their shares on stock market. There are not many joyful stories in Prague. For a successful one can be considered PEGAS. One of the main functions is access to fresh money. This is happening in Poland, but not in Czech Republic.

3. What effect would have the consolidation of these two stock exchanges for the whole subject and for Czech economy? Would this merger increase liquidity?

- JB: Těžko říct. Teoreticky by to ke zvýšení likvidity přispět mohlo. V konečném důsledku ale bude vždy záležet hlavně na strategii, kterou by nový majitel PSE zvolil a jak by se snažil na trh přilákat nové firmy a investory. Rozhýbat polomrtvý český akciový trh nebude úplně jednoduché a samotné sloučení WSE a PSE bez nové strategie nic neřeší.
- JB: It is hard to say. Theoretically it could lead to increase in liquidity. But at the end, the main thing that is important is a strategy, which will be implemented by a new owner of PSE and how they would try to attract new companies and investors. To make half-dead Czech stock market on the move will not be easy and consolidation of PSE and WSE without new strategy is not a solution.

- DJ: sloučení burzy neprinese nic pozitivního, zvýšení likvidity přinese pouze větší firmy, nové firmy a víc obchodníků a klientů (penzijní, investiční, hedge fondy). Sloučení přinese pouze snížení nákladů, ale reálně nic.
 - JB: Consolidation of stock exchange will not bring any positives, increasing in liquidity will be only for big companies, new companies and more traders and clients (pension, investment and hedge funds). Consolidation will bring only decrease in costs but nothing real.
4. What are the possible problems for this merger? Would it increase information costs because of cultural and language differences? And what about different currency?
- JB: Bohužel nejsem schopen tato rizika posoudit.
 - JB: Unfortunately I am not able to consider these types of problems.
 - DJ: fuze by neprinesla zadny technicky problem, musela by se doladit legislativa a zmena obchodnich podminek, ale to je spise technikalie.
 - DJ: Consolidation will not bring any technological problem, there would have to be some harmonization in legislation and change in terms and condition, but these are only technicalities.
5. Would this merger benefit from economies of scale and do you see this as a big advantage?
- JB: Pravděpodobně ano, i když se pravděpodobně nejedná o rozhodující factor. Nejsem však dostatečně obeznámen s možnostmi případných úspor, takže se mi to obtížně posuzuje.
 - JB: Probably yes, even though probably it is not critical factor. I am not fully aware of possibilities of potential savings, so it is difficult to consider for me.
 - DJ: nevidim v tom zadnou pridanou hodnotu!
 - DJ: I do not see any added value in this.
6. What do you think is the problem of PSE?
- JB: Největším problémem vždy byla její nízká atraktivita. Firmy nejsou motivovány k tomu, aby získaly kapitál skrze IPO. To ale nemusí být nutně vina PSE. Česko je holt malá země a velkých a stabilních společností, které by pro české investory byly zajímavé, je zde málo.
 - JB: The biggest problem has always been low liquidity. Companies are not motivated to get capital through IPO. But this does not have to be fault of PSE. Czech Republic is small country and there is small number of big and stable companies which would be interesting for Czech investors.

- DJ: burza sama o sobe nedela dost pro prezentaci a vysvetlovani vyhod, stat neprivatizoval pres burzu ale na primo, ostatni co zustava by mel dat pres burzu (politicky problem, korupce, uplatky za prodej), a dale je tu velmi malo podniku ktere na burzu mohou jsme mala zeme musime jeste pockat az vyrostou. Ale napr velka skoda ze napr. AVG je na Nasdaq, nebo chystany AVAST take velmi pravdepodobne v CR nebude. Souvisi to I pristupem penzijnich fondu a legislativou ohledne 2 pilire.
 - DJ: The stock exchange alone does not do much for presentation and explaining advantages, government did not privatize through stock exchange but directly, the rest should be privatized through stock exchange, but there are political problems, corruption. In addition there is small number of companies which can go on stock market, because we are small country and we have to wait for companies to grow. But for example AVG is on Nasdaq, or forthcoming AVAST also probably will not be listed in Czech Republic. It also depends on approach of pension funds and legislation about 2th pillar.
7. What do you think is the reason that WSE succeeds and what is their competitive advantage?
- JB: Polsko je mnohem větší země a řada státních či polostátních firem byla v minulosti privatizována právě přes WSE. V zemi se tak podařilo vytvořit již v minulosti poměrně silný kapitálový trh, který je díky velikosti polské ekonomiky schopen fungovat a solidně růst.
 - JB: Poland is much bigger country and numbers of public and half-public companies was in history privatized through WSE. In this country this helped to build relatively strong capital market, which is thanks to its size of Poland economy able to work and solidly grow.
 - DJ: pristup politiku a jina forma privatizace... vetsi ekonomika,
 - DJ: aproach of politicians and different form of privatization...bigger economy
8. Do you see any possibility that PSE could become one of the most important markets in CEE region without the merger with WSE?
- JB: Možné je vše, ale příliš tomu nevěřím. CEE má jasného lídra ve Varšavě a není zde příliš důvodů k tomu, aby podíl PSE na kapitálovém trhu v region nějak výrazně převyšoval podíl odpovídající zhruba velikosti české ekonomiky.

- JB: everything is possible, but I do not believe it very much. CEE has clear leader in Warsaw and there is not many reasons for that, that PSE's market share in the region should be bigger than its size of the economy.
 - DJ: burza je zajímavá pokud je zajímavá země a firmy uvnitř. CR momentálně dost stagnuje potřebovali bychom nějaký impulz. Ale pokud se ukáží nové společnosti a pujdou na burzu nemám o burzu starost. Je potřeba jen chtít... ALZA, SEZNAM, LESY CR, BUDVAR, POSTA... a řada dalších které by mohli na burzu.
 - DJ: Stock exchange is attractive, if the country and companies are attractive. Czech Republic is recently stagnating and needs impulse. But if new companies will come on the market, I am not worried about stock exchange in Prague. There is a need to just wait. Lot of present companies from Czech Republic could be listed in the market, Alza, Seznam, Lesy CR, Budvar, Posta.
9. Do you think that merged subject would attract more IPO's and more buyers? And if so, do you think that these buyers would decrease market volume for other stock exchanges?
- JB: Bude záležet na strategii, kterou WSE v Česku zvolí. Teoreticky to samozřejmě možné je, ale WSE bude muset přesvědčit české investory, že je v zemi dostatek velkých a stabilních firem, do kterých se vyplatí investovat. České firmy pak bude muset přesvědčit, že se jim IPO vyplatí. Mezinárodní přesah rozhodně není na škodu, a pokud by byla WSE schopná v Česku atraktivně rozvíjet akciový trh, získá rozhodující podíl na trhu, který by za určitých okolností mohl nabídnout zajímavý růstový potenciál.
 - JB: It depends on the strategy, which will WSE in Czech republic choose. Theoretically it is of course possible that WSE will have to convince Czech investors, that IPO will be profitable for them. International overlap is not useless and if WSE would be able to make the stock market in Czech Republic more attractive, it will gain decisive market share, which could have in certain way interesting growth potential.
 - DJ: nejsem zastáncem merge, nechal bych burzu samotnou
 - DJ: I am not fan of merger, I would let the stock exchange independent
10. What is your personal opinion? Should PSE and WSE merge?
- JB: Vše je otázkou ceny. PSE bych ale rozhodně příliš nepřeplácel.
 - JB: It depends on the price. I would definitely not overpay the PSE.
 - DJ: NE
 - DJ: No